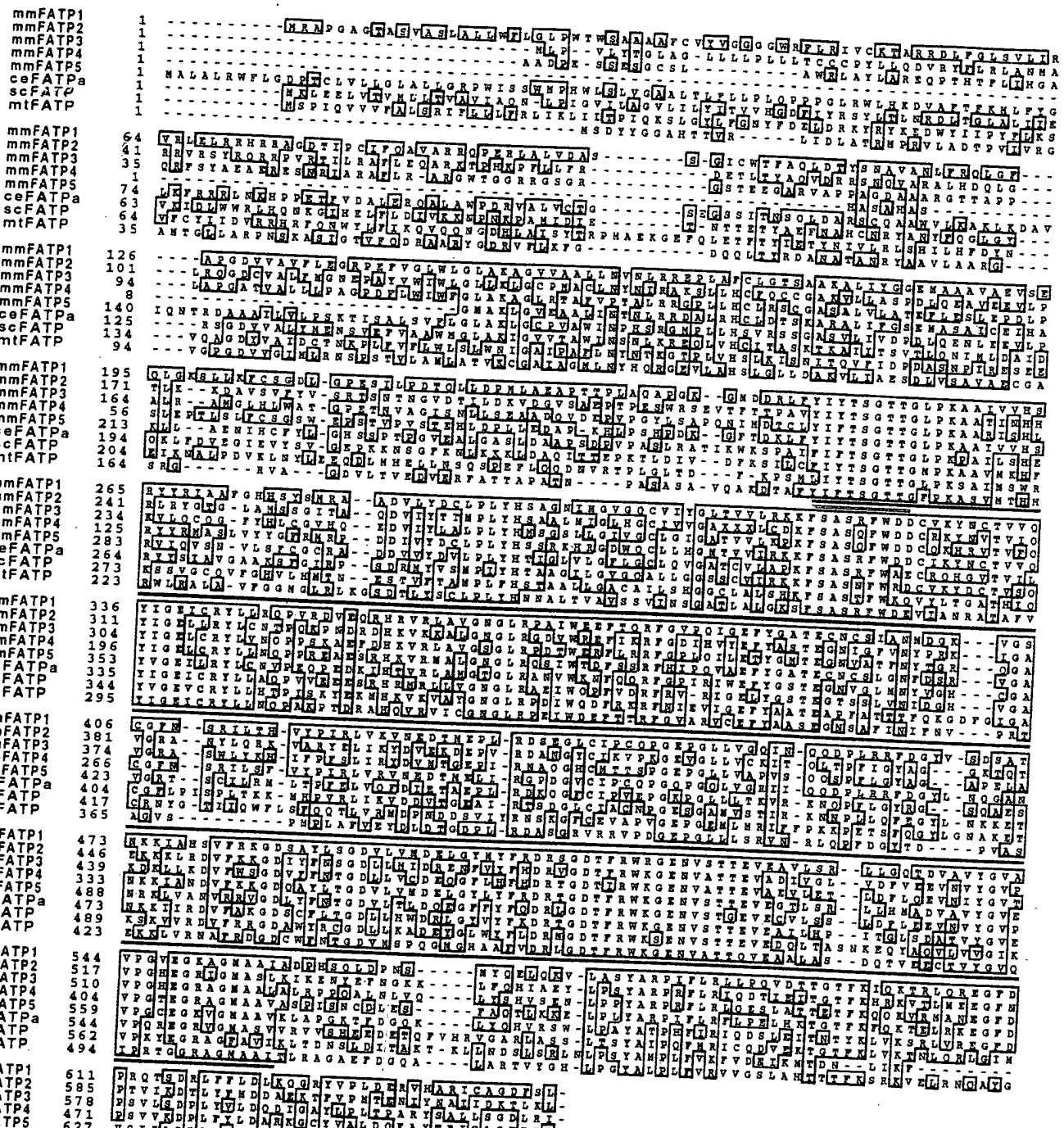

mmFATP1
mmFATP2
mmFATP3
mmFATP4
mmFATP5
ceFATPa
scFATP
mtFATP

Figure 1

Fig 2A

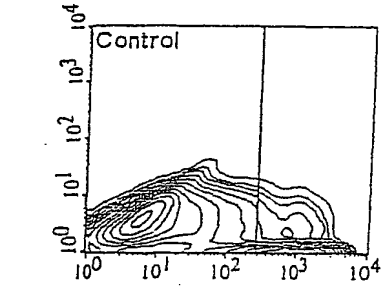


Fig. 2B

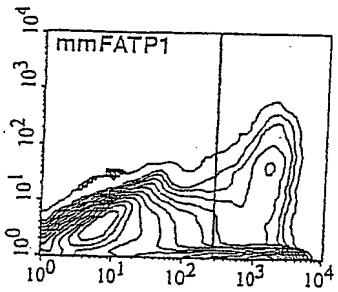
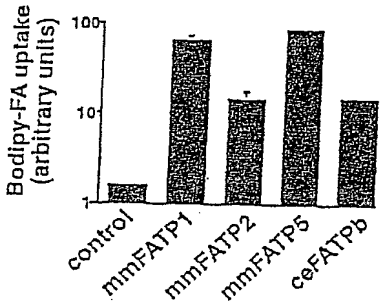
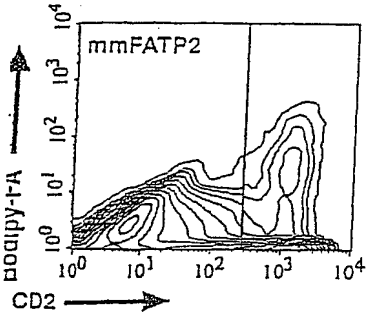
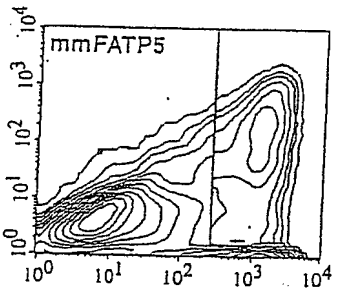


Fig. 3







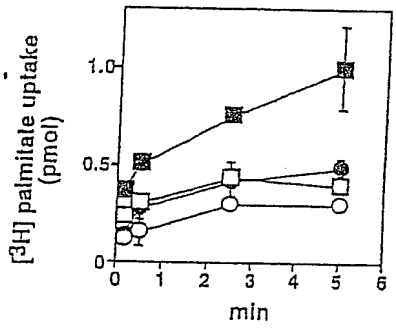


Fig. 2C

Fig. 2D

Fig. 4

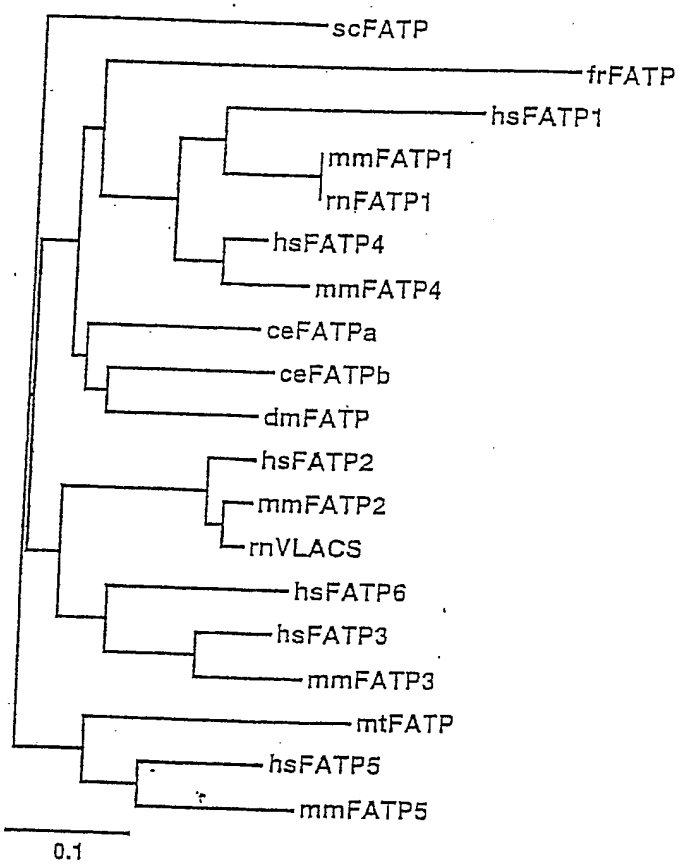
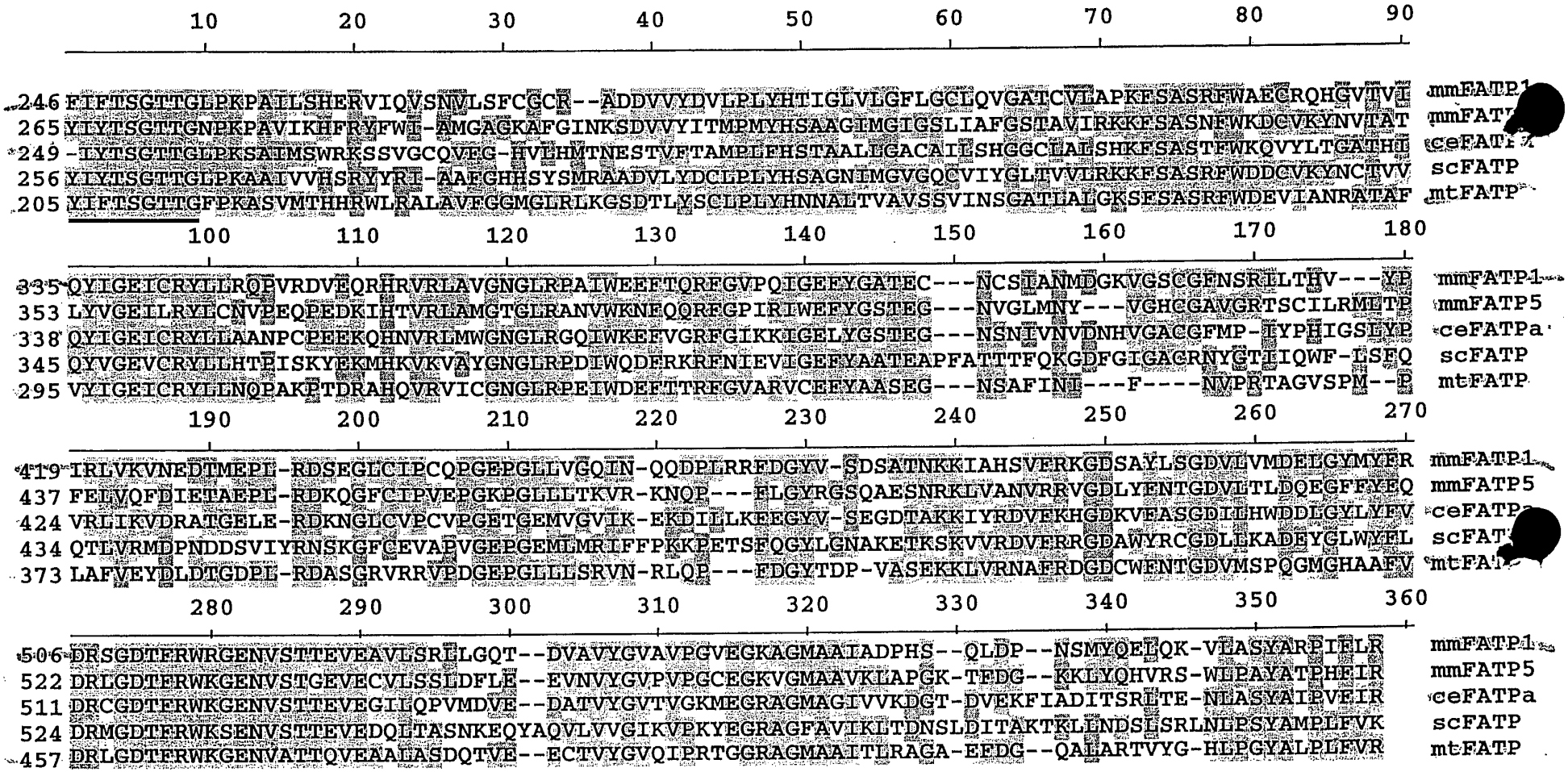

scFATP
frFATP
hsFATP1
mmFATP1
rnFATP1
hsFATP4
mmFATP4
ceFATPa
ceFATPb
dmFATP
hsFATP2
mmFATP2
rnVLACS
hsFATP6
hsFATP3
mmFATP3
mtFATP
hsFATP5
mmFATP5
0.1

Figure 5

66E260"h0550h60

FIG. 6



66E260 "h0550h60

	mmFATP1	mmFATP2	mmFATP3	mmFATP4	mmFATP5	rnFATP1	rnVLACS	ceFATPa	ceFATPb	scFATP	mtFATP
- mmFATP1	100.0										
mmFATP2	50.1	100.0									
mmFATP3	51.8	53.3	100.0								
mmFATP4	72.6	48.4	51.7	100.0							
- mmFATP5	50.2	54.0	54.4	50.8	100.0						
rnFATP1	97.5	49.7	51.6	71.4	50.4	100.0					
rnVLACS	50.7	95.2	53.0	50.9	53.6	50.3	100.0				
- ceFATPa	54.1	48.6	47.2	53.6	47.0	53.9	49.1	100.0			
ceFATPb	55.7	48.8	46.8	54.2	47.3	54.9	49.0	60.3	100.0		
- scFATP	45.5	43.2	42.3	47.0	42.7	45.5	43.9	45.3	43.1	100.0	
- mtFATP	47.5	47.8	43.9	48.2	47.2	47.1	48.3	44.9	44.5	42.3	100.0

Figure 7

mmFATP3 DNA sequence

```
ACGACTCACTATAGGGAGAGCTATGACGTCGCATGCAC 40
GCGTAAGCTTGGGCCCCTCGAGGGATCCTCTAGAGCGGCC 80
GCCGACCCCCGAAAGCTCTGAGAGCGGGTGCAGTCTGGCCT 120
GGCGTCTCGCGTACCTGGCCCGGGAGCAGCCGACACACAC 160
CTTCCTCATCCACGGCGCGCAGCGCTTTAGCTACGCGGAG 200
GCTGAGCGCGAGAGCAACCGGATTGCTCGCGCCTTTCTGC 240
GCGCACGGGGCTGGACCGGGGGCCGCCGAGGCTCGGGCAG 280
GGGCAGCACTGAGGAAGGCGCACGCGTGGCGCCTCCGGCT 320
GCAGATGCGGCTGCTAGAGGCACGACCGCGCCCCCTCTGG 360
CACCCGGGCGCGACCGTGCGGCTGCTCCTCCCAGCGGCCC 400
```

Figure 8A

GCATTTCCTTTGGATTTGGTTCGGACTGGCCAAAGCTGGC 440
CTGCGCACGGCCTTTGTGCCCACCGCTTTACGCCGAGGAC 480
CCCTGCTGCACTGCCTCCGCAGCTGCGGTGCGAGTGCGCT 520
CGTGCTGGCCACAGAGTTCCTGGAGTCCCTGGAGCCGGAC 560
CTGCCGGCCTTGACAGCCATGGGGCTCCACCTATGGCGCA 600
CGGGCCCTGAACTAATGTAGCTGGAATCAGCAATTTGCT 640
ATCGCAAGCAGCAGACCAAGTGGATCAGCCAGTGCCGGGG 680
TACCTCTCTGCCCCCCAGAACATAATGGACACCTGCCTGT 720
ACATCTTCACCTCTGGCACTACTGGCCTGCCCAAGGCTGC 760
TCGAATCAGTCATCTGAAGGTTCTACAGTGCCAGGGATTC 800
TACCATCTGTGTGGAGTCCACCAGGAGGACGTCATCTACC 840
TCGCACTCCCACTGTACCACATGTCTGGCTCCCTTCTGGG 880
CATTGTGGGCTGCTTGGGCATTGGGGCCACCGTGGTGCTG 920
AAACCCAAGTTCTCAGCTAGCCAGTTCTGGGACGATTGCC 960
AGAAACACAGGGTGACAGTGTTCCAGTACATTGGGGAGTT 1000
GTGCCGATACCTCGTCAACCAGCCCCCGAGCAAGGCAGAG 1040
TTTGACCATAAGGTGCGCTTGGCAGTGGGCAGTGGGTTGC 1080
GCCCAGACACCTGGGAGCGTTTCCTGCGGCGATTTGGACC 1120
TCTGCAGATACTGGAGACGTATGGCATGACAGAGGGCAAC 1160
GTAGCTACGTTCAATTACACAGGACGGCAGGGTGCAGTGG 1200
GGCGAGCTTCCTGGCTTTACAAGCACATCTTCCCCTTCTC 1240
CTTGATTCGATACGATGTCATGACAGGGGAGCCTATTCGG 1280
AATGCCCAGGGGCACTGCATGACCACATCTCCAGGTGAGC 1320
CAGGCCTACTGGTGGCCCCAGTGAGCCAGCAGTCCCCCTT 1360
CCTGGGCTATGCTGGGGCTCCGGAGCTGGCCAAGGACAAG 1400
CTGCTGAAGGATGTCTTCTGGTCTGGGGACGTTTTCTTCA 1440
ATACTGGGGACCTCTTGGTCTGTGATGAGCAAGGCTTTCT 1480
TCACTTCCACGATCGTACTGGAGACACCATCAGGTGGAAG 1520
GGAGACAATGTGGCCACAACTGAAGTGGCTGAGGTCTTGG 1560
AGACCCTGGACTTCCTTCAGGAGGTGAACATCTATGGAGT 1600
CACGGTGCCAGGGCAGAAGGCAGGGCAGGCATGGCGGCC 1640
TTGGCTCTGCGGCCCCCGCAGGCTCTGAACCTGGTGCAGC 1680
TCTACAGCCATGTTTCTGAGAACTTGCCACCGTATGCCCG 1720
ACCTGGGTTTCTCAGGCTCCAGGAATCTTTGGCCACTACT 1760
GAGACCTTCAAACAGCAGAAGGTTAGGATGGCCAATGAGG 1800
GCTTTGACCCCAGTGTACTGTCTGACCCACTCTATGTTCT 1840
CGGTACAGTGCCCTCCTGTCTGGAGACCTTCGAATCTGAA 1920
ACCTTCCACTTGAGGGAGGGGCTCGGAGGGTACAGGCCAC 1960
CATGGCTGCACCAGGGAGCGTTTTCGGGTATCTTTGTAT 2000
ATGGAGTCATTATTTGTAATAAACAGCTGGAGCTTAAAA 2040
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 2080
AAAAAAA 2087

Figure 8B

mmFATP3 protein sequence

AADPESSESGCSLAWRLAYLAREQPTHIFLIHGAQRFSYAEAERESNRIA 50
RAFLRARGWIGGRRGSGRGSTEEGARVAPPAGDAAARGITAPPLAPGATV 100
ALLLPAGPDFLWIWFGLAKAGLRTAFVPTALRRGPLLHCLRSCGASALVL 150
ATEFLESLEPDLPALRAMGLHLWATGPEINVAGISNLLSEAADQVDEPVP 200
GYLSAPQNIMDICLYTFTSGTTGLPKAARISHLKVLQCQGFYHLCGVHQE 250
DVIYLALPLYHMSGSLLGIVGCLGIGATVVLKPKFSASQFWDDCQKHRVT 300
VFQYIGELCRYLVNQPPSKAEFDHKVRLAVGSGLRPDIWERFLRRFGPLQ 350
ILETYGMTEGNVATFNYTGRQGAVGRASWLYKHIFPFSLIRYDVMTGEPI 400
RNAQGHCMTTSPGEPGLLVAPVSQQSPFLGYAGAPELAKDKLLKDVFWSG 450
DVFFNTGDLLVCDEQGFLHFHDRTGDTIRWKGENVATTEVAEVLEILDFL 500
QEVNIYGVTVPGHEGRAGMAALALRPPQALNLVQLYSHVSENLPPYARPR 550
FLRLQESLATTETFKQQKVRMANEGFDPSVLSDPLYVLDQDTGAYLPLTP 600
ARYSALLSGDLRI 613

Figure 9

mmFATP4 DNA sequence

CCCACGCGTCCGCCCACGCGTCCGGCATGGCCAAGCTGGG 40
CGTGGAGGCGGCTCTCATCAACACCAACCTTAGGCGGGAT 80
GCCCTGCGCCACTGTCTTGACACCTCAAAGGCACGAGCTC 120
TCATCTTTGGCAGTGAGATGGCCTCAGCTATCTGTGAGAT 160
CCATGCTAGCCTGGAGCCCACACTCAGCCTCTTCTGCTCT 200
GGATCCTGGGAGCCCAGCACAGTGCCCGTCAGCACAGAGC 240
ATCTGGACCCTCTTCTGGAAGATGCCCCGAAGCACCTGCC 280
CAGTCACCCAGACAAGGGTTTTACAGATAAGCTCTTCTAC 320
ATCTACACATCGGGCACCACGGGGCTACCCAAAGCTGCCA 360
TTGTGGTGCACAGCAGGTATTATCGTATGGCTTCCCTGGT 400
GTACTATGGATCCGCATGCGGCCTGATGACATTGTCTAT 440
GACTGCCTCCCCCTCTACCACTCAAGCAGGAAACATCGTG 480
GGGATTGCCAGTGCTTACTCCACGGCATGACTGTGGTGAT 520
CCCGAAGAAGTTCTCAGCCTCCCGGTTCTGGGATGATTGT 560
ATCAAGTACAACTGCACAGTGGTACAGTACATTGGCGAGC 600
TCTGCCGCTACCTCCTGAACCAGCCACCCCGTGAGGCTGA 640
GTCTCGGCACAAGGTGCGCATGGCACTGGGCAAGGGTCTC 680
CGGCAGTCCATCTGGACCGACTTCTCCAGCCGTTTCCACA 720

Figure 10A

TCCCCCAGGTGGCTGAGTTCTATGGGGCCACTGAATGCAA 760
CTGTAGCCTGGGCAACTTTGACAGCCCGGTGGGGGCCTGT 800
GGCTTCAATAGCCGCATCCTGTCCTTTGTGTACCCTATCC 840
GTTTGGTACGTGTCAATGAGGATACCATGGAACTGATCCG 880
GGGACCCGATGGAGTCTGCATTCCCTGTCAACCAGGTCAG 920
CCAGGCCAGCTGGTGGGTCGCATCATCCAGCAGGACCCTC 960
TGCGCCGTTTCGACGGGTACCTCAACCAGGGTGCCAACAA 1000
CAAGAAGATTGCTAATGATGTCTTCAAGAAGGGGGACCAA 1040
GCCTACCTCACTGGTGAGGTCCTGGTGATGGATGAGCTGG 1080
GTTACCTGTACTTCCGAGATGGCACTGGGGACACGTTCCG 1120
CTGGAAAGGGGAGAATGTATCTACCACTGAGGTGCAGGGC 1160
ACACTCAGCCGCCTGCTTCATATGGCAGATGTGGCAGTTT 1200
ATGGTGTTGAGGTGCCAGGAACTGAAGCCGAGCAGGAAT 1240
GGCTGCCGTTGCAAGTCCCATCAGCAACTGTGACCTGGAG 1280
AGCTTTGCACAGACCTTGAAAAAGGAGCTGCCTCTGTATG 1320
CCCGCCCCATCTTCCTGCGCTTCTTGCCTGAGCTGCACAA 1360
GACAGGGACCTTCAAGTTCCAGAAGACAGAGTTGCGGAAG 1400
GAGGGCTTTGACCCATCTGTTGTGAAAGACCCGCTGTTCT 1440
ATCTGGATGCTGGAAGGGCTGCTACGTTGCACTGGACCA 1480
GGAGGCCTATACCCGCATCCAGGCAGGCGAGGAGAAGCTG 1520
TGATTTCCCCCTACATCCCTCTGAGGGCCAGAAGATGCTG 1560
GATTCAGAGCCCTAGCGTCCACCCCAGAGGGTCCTGGGCA 1600
ATGCCAGACCAAAGCTAGCAGGGCCCGCACCTCCGCCCCT 1640
AGGTGCTGATCTCCCCTCTCCCAAACTGCCAAGTGACTCA 1680
CTGCCGCTTCCCCGACCCTCCAGAGGCTTTCTGTGAAAGT 1720
CTCATCCAAGCTGTGTCTTCTGGTCCAGGCGTGGCCCCTG 1760
GCCCCAGGGTTTCTGATAGGCTCCTTTAGGATGGTATCTT 1800
GGGTCCAGCGGGCCACGGTGTGGGAGAGGAGTCACTAAGA 1840
TCCCTCCAATCAGAAGGAGCTTACAAAGGAACCAAGGCA 1880
AAGCCTGTAGACTCAGGAAGCTAAGTGGCCAGAGACTATA 1920
GTGGCCAGTCATCCCATGTCCACAGAGGATCTTGGTCCAG 1960
AGCTGCCAAAGTGTCACCTCTCCCTGCCTGCACCTCTGGG 2000
GAAAAGAGGACAGCATGTGGCCACTGGGCACCTGTCTCAA 2040
GAAGTCAGGATCACACACTCAGTCCTTGTTTCTCCAGGTT 2080
CCCTTGTTCTTGTCTCGGGGAGGGAGGGACGAGTGTCCTG 2120
TCTGTCCTTCCTGCCTGTCTGTGAGTCTGTGTTGCTTCTC 2160
CATCTGTCCTAGCCTGAGTGTGGGTGGAACAGGCATGAGG 2200
AGAGTGTGGCTCAGGGGCCAATAAACTCTGCCTTGACTCC 2240
TCTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 2280
AAAAAAAAAAAAAAAAAAAA 2301

Figure 10B

mmFATP4 protein sequence

```
HASAHASGMAKLGVEAALININLRRDALRHCLDISKARAL 40
IFGSEMASAICEIHASLEPILSLFCSGSWEPSIVPVSIEH 80
LDPLLEDAPKHLPSHPDKGFIDKLFYIYTSGTTGLPKAAI 120
VVHSRYYRMASLVYYGFRMRPDDIVYDCLPLYHSSRKHRG 160
DWQCLLHGMTVVIRKKFSASRFWDDCIKYNCIVVQYIGEL 200
CRYLLNQPPREAESRHKVRMALGNGLRQSIWIDFSSRFHI 240
PQVAEFYGATECNCSLGNFDSRVGACGFNSRILSFVYPIR 280
LVRVNEDIMELIRGPDGVCIPCQPGQPGQLVGRLIQQDPL 320
RRFDGYLNQGANNKKIANDVFKKGDQAYLTGDVLVMDELG 360
YLYFRDRIGDTFRWKGENVSTTEVEGILSRLLHMADVAVY 400
GVEVPGTEGRAGMAAVASPISNCDLESFAQTLKKELPLYA 440
RPIFLRFLPELHKTGIFKFQKTELRKEGFDPSVVKDPLFY 480
LDARKGCYVALDQEAYTRIQAGEEKL 507
```

Figure 11

mmFATP5 DNA sequence

```
CACTCATCAGAGCTAAGAGAGACTACACGCTCTCATCTAC 40
TTCAGAAAGAGCCAATGCCATGGGTATTTGGAAGAAACTA 80
ACCTTACTGCTGTTGCTGCTTCTGCTGGTTGGCCTGGGGC 120
AGCCCCCATGGCCAGCAGCTATGGCTCTGGCCCTGCGTTG 160
GTTCCTGGGAGACCCCACATGCCTTGTGCTGCTTGGCTTG 200
GCATTGCTGGGCAGACCCTGGATCAGCTCCTGGATGCCCC 240
ACTGGCTGAGCCTGGTAGGAGCAGCTCTTACCTTATTCCT 280
ATTGCCTCTACAGCCACCCCCAGGGCTACGCTGGCTGCAT 320
AAAGATGTGGCTTTCACCTTCAAGATGCTTTTCTATGGCC 360
TAAAGTTCAGGCGACGCCTTAACAAACATCCTCCAGAGAC 400
CTTTGTGGATGCTTTAGAGCGGCAAGCACTGGCATGGCCT 440
GACCGGGTGGCCTTGGTGTGTACTGGGTCTGAGGGCTCCT 480
CAATCACAAATAGCCAGCTGGATGCCAGGTCCTGTCAGGC 520
AGCATGGGTCCTGAAAGCAAAGCTGAAGGATGCCGTAATC 560
CAGAACACAAGAGATGCTGCTGCTATCTTAGTTCTCCCGT 600
CCAAGACCATTTCTGCTTTGAGTGTGTTTCTGGGGTTGGC 640
CAAGTTGGGCTGCCCTGTGGCCTGGATCAATCCACACAGC 680
CGAGGGATGCCCTTGCTACACTCTGTACGGAGCTCTGGGG 720
CCAGTGTGCTGATTGTGGATCCAGACCTCCAGGAGAACCT 760
GGAAGAAGTCCTTCCCAAGCTGCTAGCTGAGAACATTCAC 800
```

Figure 12A

TGCTTCTACCTTGGCCACAGCTCACCCACCCCCGGGAGTAG 840
AGGCTCTGGGAGCTTCCCTGGATGCTGCACCTTCTGACCC 880
AGTACCTGCCAGCCTTCGAGCTACGATTAAGTGGAAATCT 920
CCTGCCATATTCATCTTTACTTCAGGGACCACTGGACTCC 960
CAAAGCCAGCCATCTTATCACATGAGCGGGTCATACAAGT 1000
GAGCAACGTGCTGTCCTTCTGTGGATGCAGAGCTGATGAT 1040
GTGGTCTATGACGTCCTACCTCTGTACCATACGATAGGGC 1080
TTGTCCTTGGATTCCTTGGCTGCTTACAAGTTGGAGCCAC 1120
CTGTGTCCTGGCCCCCAAGTTCTCTGCCTCCCGATTCTGG 1160
GCTGAGTGCCGGCAGCATGGCGTAACAGTGATCTTGTATG 1200
TGGGTGAAATCCTGCGGTACTTGTGTAACGTCCCTGAGCA 1240
ACCAGAAGACAAGATACATACAGTGCGCTTGGCCATGGGA 1280
ACTGGACTTCGGGCAAATGTGTGCAAAAACTTCCAGCAAC 1320
GCTTTGGTCCCATTCGGATCTGGGAATTCTACGGATCCAC 1360
AGAGGGCAATGTGGGCTTAATGAACTATGTGGGCCACTGC 1400
GGGGCTGTGGGAAGGACCAGCTGCATCCTTCGAATGCTGA 1440
CTCCCTTTGAGCTTGTACAGTTCGACATAGAGACAGCAGA 1480
GCCTCTGAGGGACAAACAGGGTTTTTGCATTCCTGTGGAG 1520
CCAGGAAAGCCAGGACTTCTTTTGACCAAGGTTCGAAAGA 1560
ACCAACCCTTCCTGGGCTACCGTGGTTCCCAGGCCGAGTC 1600
CAATCGGAAACTTGTTGCGAATGTACGACGCGTAGGAGAC 1640
CTGTACTTCAACACTGGGGACGTGCTGACCTTGGACCAGG 1680
AAGGCTTCTTCTACTTTCAAGACCGCCTTGGTGACACCTT 1720
CCGGTGGAAGGGCGAAAACGTATCTACTGGAGAGGTGGAG 1760
TGTGTTTTGTCTAGCCTAGACTTCCTAGAGGAAGTCAATG 1800
TCTATGGTGTGCCCTGTGCCAGGGTGTGAGGGTAAGGTTGG 1840
CATGGCTGCTGTGAAACTGGCTCCTGGGAAGACTTTTGAT 1880
GGGCAGAAGCTATACCAGCATGTCGGCTCCTGGCTCCCTG 1920
CCTATGCCACACCTCATTCATCGTATCCAGGATTCCCT 1960
GGAGATCACAAACACCTACAAGCTGGTAAAGTCACGGCTG 2000
GTGCGTGAGGGTTTTGATGTGGGATCATTGCTGACCCCC 2040
TCTACATACTGGACAACAAGGCCCAGACCTTCCGGAGTCT 2080
GATGCCAGATGTGTACCAGGCTGTGTGTGAAGGAACCTGG 2120
AATCTCTGACCACCTAGCCAACTGGAAGGCAATCCAAAAG 2160
TGTAGAGATTGACACTAGTCAGCTTCACAAAGTTGTCCGG 2200
GTTCGAGATGCCCATGGCCCAGTAGTACTTAGAGAATAAA 2240
CTTGAATGTGTATACAAAAAAAAAAAAAAAAAAAAA 2277

Figure 12B

mmFATP5 protein sequence

MALALRWFLGDPTCLVLLGLALLGRPWISSWMPHWLSLVG 40
AALTLFLLPLQPPPGLRWLHKDVAFTFKMLFYGLKFRRRL 80
NKHPPETFVDALERQALAWPDRVALVCTGSEGSSITNSQL 120
DARSCQAAWLKAKLKDAVIQNTRDAAAILVLPSKTTISAL 160
SVFLGLAKLGCPVAWINPHSRGMPLLHSVRSSGASVLIVD 200
PDLQENLEEVLPKLLAENIHCFYLGHSSPTPGVEALGASL 240
DAAPSDPVPASLRATIKWKSPAIFIFTSGTTGLPKPAILS 280
HERVIQVSNVLSFCGCRADDVVYDVLPLYHTTGLVLGFLG 320
CLQVGATCVLAPKFSASRFWAECRQHGVTVILYVGEILRY 360
LCNVPEQPEDKIHTVRLAMGTGLRANVWKNFQQRFGPIRI 400
WEFYGSTEGNVGLMNYVGHCGAVGRTSCILRMLTPFELVQ 440
FDIETAEPLRDKQGFCIPVEPGKPGLLLTKVRKNQPFLGY 480
RGSQAESNRKLVANVRRVGDLYFNTGDVLTLDQEGFFYFQ 520
DRLGDTFRWKGENVSTGEVECVLSSLDFLEEVNVYGVPVP 560
GCEGKVGMAAVKLAPGKTFDGQKLYQHVRSWLPAYATPHF 600
IRIQDSLEITNTYKLVKSRLVREGFDVGIIADPLYILDNK 640
AQTFRSLMPDVYQAVCEGIWNL 663

Figure 13

hsFATP2 DNA sequence

ATGGCATTGACTCTTTCCTGGACAAAGTGGATGAAGTATC 40
AACTGAACCTATCCCAGAGTCATGGAGGTCTGAAGTCACT 80
TTTTCCACTCCTGCCTTATACATTTATACTTCTGGAACCA 120
CAGGTCTTCCAAAAGCAGCCATGATCACTCATCAGCGCAT 160
ATGGTATGGAACTGGCCTCACTTTTGTAAGCGGATTGAAG 200
GCAGATGATGTCATCTATATCACTCTGCCCTTTTACCACA 240
GTGCTGCACTACTGATTGGCATTCACGGATGTATTGTGGC 280
TGGTGCTACTCTTGCCTTGCGGACTAAATTTTCAGCCAGC 320
CAGTTTTGGGATGACTGCAGAAAATACAACGTCACTGTCA 360
TTCAGTATATCGGTGAACTGCTTCGGTATTTATGCAACTC 400
ACCACAGAAACCAAATGACCGTGATCATAAAGTGAGACTG 440
GCACTGGGAAATGGCTTACGAGGAGATGTGTGGAGACAAT 480
TTGTCAAGACATTTGGGGACATATGCATCTATGAGTTCTA 520
TGCTGCCACTGAAGGCAATATTGGATTTATGAATTATGCG 560
AGAAAAGTTGGTGCTGTTGGAAGAGTAAACTACCTACAGA 600
AAAAAATCATAACTTATGACCTGATTAAATATGATGTGGA 640
GAAAGATGAACCTGTCCGTGATGAAAATGGATATTGCGTC 680
AGAGTTCCCAAAGGTGAAGTTGGACTTCTGGTTTGCAAAA 720
TCACACAACTTACACCATTTAATGGCTATGCTGGAGCAAA 760
GGCTCAGACAGAGAAGAAAAAACTGAGAGATGTCTTTAAG 800

Figure 14A

09405504.092399

AAAGGAGACCICIATTICAACAGIGGAGATCICITAATGG 840
TIGACCATGAAAATTICATCIATTICCACGACAGAGTIGG 880
ACATACATICCGGIGGAAAGGGGAAAATGIGGCCACCACT 920
GAAGTIGCIGATATAGTIGGACIGGTIGATTTTTTICCAA 960
GGAAGIAAAATGTTTATGGCAGIGCATGGGCCAAGATNAT 1000
GGAGGTICGAATIGGCATGGCNTICCNTICAAAATGGAAA 1040
GAAAACCATGGAATTIGATGGAAAGAAATTTTTICAGNAC 1080
ATIGCIGATAACCNACCIAGITATGCAAGGCCCCCGTTTT 1120
NIAAGAANACAGGACACCATIGAGATCACIGGAATTTTTA 1160
AACACCGCAAAATGACCTTIGGIGGAGGAGGGCTTTAACC 1200
CNGCIGICATCAAAGATGCCTIGIATTTICTIGGATGACA 1240
CAGCAAAAATGIATGIGCCIATGACIGAGGACATNTATAA 1280
TGCCATAAGIGNIAAAACCCIGAAATTNIGAATATICCCA 1320
GGAGGATAATICAACATTICCAGAAAGAAACIGAATGGAC 1360
AGCCACTIGATATAATCCAACTTIAATTIGATIGAAGATT 1400
GIGAGGAAATTTIGIAGGAAATTIGCATACCCGIAAAGGG 1440
AGACITTTTTAAATAACAGTIGAGICTTIGCAAGIAAAAA 1480
GATTTAGAGATTATTATTTTICAGIGIGCACCIACIGTTT 1520
GTATTIGCAAACIGAGCTIGTIGGAGGGAAGGCATTATTT 1560
TTTAAAATACTTAGTAAATTAAAGAACACCAACATGIGAA 1600
AAAAAAAAAAAAAAAAAAAAA 1622

Figure 14B

hsFATP2 protein sequence

YIYISGITGLPKAAMTHQRIWYGIGLIFVSGLKADDVIY 40
ITLPFYHSAALLIGIHGCIVAGATLALRIKFSASQFWDDC 80
RKYNVIVIQYIGELLRYLCNSPQKPNDRDHKVRLALGNGL 120
RGDVWRQFVKRFGDICIYEFYAATEGNIGFMNYARKVGAV 160
GRVNYLQKKLITYDLIKYDVEKDEPVRDENGYCVRVPKGE 200
VGLLVCKITQLTPFNGYAGAKAQIEKKKLRDVFKKGDLYF 240
NSGDLLMVDHENFIYFHDRVGDIFRWKGENVATTEVADIV 280
GLVDFF 286

Figure 15

hsFATP3 DNA sequence

CAATTCGGGACCCCCAGGGGCACTGIATGGCCACATCICC 40
AGGTGAGCCAGGGGAAGTTGCTAAAGGATGICTICCGCCC 80
TGGGGATGTTTTCTTCAACACTGGGGACCTGCTGGTCTGC 120
GATGACCAAGGTTTTCTCCGCTTCCATGATCGTACTGGAG 160

Figure 16A

ACACCTTCAGGTGGAAAGGGGAGAATGTGGCCACAACGA 200
GGTGGCAGAGGTCTTCGAGGCCTAGATTTTCTTCAGGAG 240
GTGAACGTCTATGGAGTCACTGTGCCAGGGCATGAAGGCA 280
GGGCTGGAATGGCAGCCCTAGTTCTGCGTCCCCCCCACGC 320
TTTGGACCTTATGCAGCTCTACACCCACGTGTCTGAGAAC 360
TTGCCACCTTATGCCCGGCCCCGATTCCTCAGGCTCCAGG 400
AGTCTTTGGCCACCACAGAGACCTTCAAACAGCAGAAAGT 440
TCGGATGGCAAATGAGGGCTTCGACCCCAGCACCCTGTCT 480
GACCCACTGTACGTTCTGGACCAGGCTGTAGGTGCCTACC 520
TGCCCCTCACAACTGCCCGGTACAGCGCCCTCCTGGCAGG 560
AAACCTTCGAATCTGAGAACTTCCACACCTGAGGCACCTG 600
AGAGAGGAACTCTGTGGGGTGGGGGCGGTTGCAGGTGTAC 640
TGGGCTGTCAGGGATCTTTTCTATACCAGAACTGGGGTCA 680
CTATTTGTAATAAATGTGGCTGGAGCTGATCCAGCTGTC 720
TCTGACCTACAAAAAAAAAAAAAAAAAAAAA 753

Figure 16B

hsFATP3 protein sequence

QFGTPRGTVWPHLQVSQGKLLKDVFRPGDVFFNTGDLLVC 40
DDQGFLRFHDRTGDTFRWKGENVATTEVAEVFEALDFLQE 80
VNVYGVTVPGHEGRAGMAALVLRPPHALDLMQLYTHVSEN 120
LPPYARPRFLRLQESLATTETFKQQKVRMANEGFDPSTLS 160
DPLYVLDQAVGAYLPLTTARYSALLAGNLRI 191

Figure 17

hsFATP4 DNA sequence

TCAAGTACAACTGCACGATTGTCATANCATTGGTGAACTG 40
TGCCGNTACCTCCTGAACCAGCCACCGCGGGAGGCAGAAA 80
ACCAGCACCAGGTTCGCATGGCACTAGGCAATGGCCTCCG 120
GCAGTCCATCTGGACCAACTTTTCCAGCCGCTTCCACATA 160
CCCCAGGTGGCTGAGTTYTACGGGGCCACAGAGTGCAACT 200
GTAGCCTGGGCAACTTCGACAGCCAGGTGGGGGCCTGTGG 240
TTTCAATAGCGGCATCCTGTCCTTCGTGTACCCCATCCGG 280
TTGGTACGTGTCAACGAGGACACCATGGAGCTGATCCGGG 320
GGCCGGACGGCGTCTGCATTCCCTGCCAGCCAGGTGAGCC 360
GGGCCAGCTGGTGGCCGCATCATCCAGAAAGACCCCCTG 400
CGCCGCTTCGATGGCTACCTCAACCAGGGCGCCAACAACA 440
AGAAGATTGCCAAGGATGTCTTCAAGAAGGGGGACCAGGC 480
CTACCTTACTGGTGATGTGCTGGTGATGGACGAGCTGGGC 520
...

Figure 18A

TACCTGTACTTCCGACACGCACTGGGGACACGTTCCGCT 560
GCAAAGGTGAGAACGTGTCCACCACCGAGGTGGAAGCAC 600
ACTCAGCCGCCTGCTGGACATGGCTGACGTGGCCGTGTAT 640
GGTGTCGAGGTGCCAGGAACCGAGGCCGGGCCGGAATGG 680
CTGCTGTGGCCAGCCCCACTGGCAACTGTGACCTGGGAGC 720
GCTTTGCTCAGGTC 734

Figure 18B

hsFATP4 protein sequence

IGELCRYLLNQPPRFAENQHQVRMALGNGLRQSIWINFSS 40
RFHIPQVAEFYGATECNCSLGNFDSQVGACGFNSRILSFV 80
YPIRLVRVNEDIMELIRGPDGVCIPCQPGEPGQLVGRIIQ 120
KDPLRRFDGYLNQGANNKKIAKDVFKKGDQAYLTGDVLVM 160
DELGYLYFRDRTGDTFRWKGENVSTTEVEGILSRLLDMAD 200
VAVYGVEVPGTEG 213

Figure 19

hsFATP5 DNA sequence

CNTGCCTCTTGTACCACGTGATGGGACTTTGTCGTTGGGA 40
TCCTCGGCTGCTTAGATCTCGGAGCCACCTGTGTTCTGGC 80
CCCCAAGTTCTCTACTTCCTGCTTCTGGGATGACTGTCGG 120
CAGCATGGCGTGACAGTGATCCTGTATGTGGGCGAGCTCC 160
TGCGNTACTTGTGTAACATTCCCCAGCAACCAGAGGACCG 200
GACACATACAGTCCGCCTGGCAATGGGCAATGGACTACGG 240
GCTGATGTGTGGGGAGACCTTCCAGCAGCGTTTCGGTCCT 280
ATTTCGGATCTNGGGAAGTCTTACGGGCTYCCACAGAAGG 320
GCAACATGGGGCTTTAGTTCAACTATGTTGGGGGCGCTG 360
CGGGGSCCTGGRGGCAAAGATGGAGCTTGCCTCCTCCGAA 400
TGCTGTCCCCCTTTGAGCTGGTGCAGTTCGACATGGAGGC 440
GGCGGAGCCTGTGAGGGACAATCAGGGCTTCTGCATCCCT 480
GTAGGGCTAGGGGAGCCGGGGCTGCTGTTGACCAAGGTGG 520
TAAGCCAGCAACCCTTCGTGGGCTACCGCGGCCCCCGAGA 560
GCTGTCGGAACGGAAGCTGGTGCGCAACGTGCGGCAATCG 600
GGCGACGTTTACTACAACACCGGGGACGTACTGCCATGG 640
ACCGCGAAGGCTTCCTCTACTTCCGCGACCGACTGGGGA 680
CACCTTCCGATGGAAGGGCGAGAACGTGTCCACGCACGAG 720
GTGGAGGGCGTGTTGTCGCAGGTGGACTTCTTGCAACAGG 760
TTAACGTGTATGGCGTGTCGGTGCCAGGTTGTGAGGGTAA 800
GGTGGCATGGCTGCTGTGGCATTAGCCCCCGGCCAGACT 840

Figure 20A

09405504 - 050295

TTCGACGGGGAGAAGTTGTACCAGCACGTTCGCGCTTGGC 880
TCCCTGCCTACGCTACCCCCCATTTCATCCGCATCCAGGA 920
CGCCATGGAGGTCACCAGCACGTTCAAACTGATGAAGACC 960
CGGTTGGTGCGTGAGGGCTTCAATGTGGGGATCGTGGTTG 1000
ACCCTCTGTTTGTACTGGACAACCGGGCCCAGTCCTTCCG 1040
GCCCCTGACGGCAGAAATGTACCAGGCTGTGTGTGAGGGA 1080
ACCTGGAGGCTCTGATCACCTGGCCAACCCACTGGGGTAG 1120
GCATCAAAGCCAGCCACCCCCACCCCAACACACTCGGTGT 1160
CCCTTTCATCCTGGGCCTGTGTGAATCCCAGCCTGGCCAT 1200
ACCCTCAACCTCAGTGGGCTGGAAATGACAGTGGGCCCTG 1240
TAGCAGTGGCAGAATAAACTCAGMTGYGTTCACAGAAA 1278

Figure 20B

hsFATP5 protein sequence

EGQHGALVQLLLGALRGPGGKDGACLLRMLSPFELVQFDM 40
EAAEPVRLNQGFCIPVGLGEPGLLLTKVVSQQPFVGYRGP 80
RELSERKLVRNVRQSGDVYYNTGDVLAMDREGFLYFRDRL 120
GDTFRWKGENVSTHEVEGVLSQVDFLQQVNVYGVCVPGCE 160
GKVGMAAVALAPGQTFDGEKLYQHVRAWLPAYATPHFIR 199

Figure 21

hsFATP6 DNA sequence

CGCTTGTGTGTTAAAGAAGAAATTTTCAGCAAGCCAGTTT 40
TGGAGTGACTGCAAGAAGTATGATGTGACTGTGTTTCAGT 80
ATATTGGAGAACTTTGTCGCTACCTTTGCAAACAATCTAA 120
GAGAGAAGGAGAAAAGGATCATAAGGTGCGTTTGGCAATT 160
GGAAATGGCATACCGAGTGATGTATGGAGAGAATTTTTAG 200
ACAGATTTGGAAATATAAAGGTGTGTGAACTTTATGCAGC 240
TACCGAATCAAGCATATCTTTCATGAACTACACTGGGAGA 280
ATTGGAGCAATTGGGAGAACAAATTTGTTTTACAAACTTC 320
TTTCCACTTTTGACTTAATAAAGTATGACTTTCAGAAAGA 360
TGAACCCATGAGAAATGAGCAGGGTTGGGTATTCATGAGA 400
AAAAGGAGACCTGGACTTCTCATTTCTCGAGTGAATGCAA 440
AAAATCCCTTCTTTGGCTATGCTGGGCCTTATAAGCACAC 480
AAAAGACAAATTGCTTTGTGATGTTTTTAAGAAGGAGAT 520
GTTTACCTTAATACTGGAGACTTAATAGTCCAGGATCAGG 560
ACAATTTCCTTTATTTTTGGACCGTACTGGAGACACTTT 600
CAGATGGAAAGGAGAAAATGTCGCAACCACTGAGGTTGCT 640
GATGTTATTGGAATGTTGGATTTCATACAGGAAGCAAACG 680
TCTATGGTGTGGCTATATCAGGTTATGAAGGAAGAGCAGG 720

Figure 22A

AATGGCTTCTATTATTTTAAAACCAAATACATCTTTAGAT 760
TTGGAAAAAGTTTATGAACAAGTTGTAACATTTCTACCAG 800
CTTATGCTTGTCCACGATTTTTAAGAATTCAGGAAAAAAT 840
GGAAGCAACAGGAACATTCAAACTATTGAAGCATCAGTTG 880
GTGGAAGATGGATTTAATCCACTGAAAATTTCTGAACCAC 920
TTTACTTCATGGATAACTTGAAAAAGTCTTATGTTCTACT 960
GACCAGGGAACTTTATGATCAAATAATGTTAGGGGAAATA 1000
AAACTTTAAGATTTTTATATCTAGAACTTTCATATGCTTT 1040
CTTAGGAAGAGTCAGAGGGGGGTATATGATTCTTTATGAA 1080
ATGGGGAAAGGGAGCTAACATTAATTATGCATGTACTATA 1120
TTTCCTTAATATGAGAGATAATTTTTTAATTGCATAAGAA 1160
TTTTAATTTCTTTTAATTGATATAAACAGAGTTGATTATT 1200
CTTTTTATCTATTTGGAGATTCAGTGCATAACTAAGTATT 1240
TTCCTTAATACTAAAGATTTTAAATAATAAATAGTGGCTA 1280
GCGGTTTGGACAATCACTAAAAATGTACTTTCTAATAAGT 1320
AAAATTTCTAATTTTGAATAAAAGATTAAATTTTACTGAA 1360
A 1361

Figure 22B

hsFATP6 protein sequence

ACVLKKKFSASQFWSDCKKYDVIVFQYIGELCRYLCKQSKREGEKDHKVR 50
LAIGNGIRSDVWREFLDRFGNIKVCELYAATESSISFMNYTGRIGAIGRT 100
NLFYKLLSIFDLIKYDFQKDEPMRNEQGWFMRKRRPGLLISRVNAKNPF 150
FGYAGPYKHIKDKLLCDVFKKGDVYLNIGDLIVQDQINFLYFWDRIGDIF 200
RWKGENVATTEVADVIGMLDFIQEANVYGVAISGYEGRAGMASIILKPNT 250
SLDLEKVYEQVVIFLPAYACPRFLRIQEKMEATGIFKLLKHQLVEDGFNP 300
LKISEPLYFMDNLKKSYVLLIRELYDQIMLGEIKL 335

Figure 23

mtFATP DNA sequence

TAGTCGATAACGTCAAGGACGCCTCTGCGGGCCTGCGCACC 40
TTCCTGAGGTTGGTCGACAACCAATTCGACATTTCGCAAA 80
CGAATCGAGGGCTTACGTGTCCGATTACTACGGCGGCGCA 120
CACACAACGGTCAGGCTGATCGACCTGGCAACTCGGATGC 160
CGCGAGTGTTGGCGGACACGCCGGTCATTGTCGGTGGGGC 200
AATGACCGGGCTGCTGGCCCGGCCGAATTCCAAGGCGTCG 240
ATCGGCACGGTGTTCCAGGACCGGGCCGCTGGCTACGGTG 280
ACCGAGTCTTCCTGAAATTCGGCGATCAGCAGCTGACCTA 320
CCGCGACGCTAACGCCACCGCCAACCGGTACGCCGCGGTG 360

Figure 24A

05405504.050300

TTGGCCGCCCCGCCGCGTCGGCCCCCGGCCGACGTCGTTGGCA 400
TCATGTTGCGTAACTCACCCAGCACAGTCTTGGCCGATGCT 440
GCCCACGGTCAAGTGCGGCGCTATCGCCGGCATGCTCAAC 480
TACCACCAGCGCGGCGAGGTGTTGGCGCACAGCCTGGGTC 520
TGCTGGACGCGAAGGTACTGATCGCAGAGTCCGACTTGGT 560
CAGCGCCGTCGCCGAATGCGGCGCCTCGCCGCGGCCGGTA 600
GCGGCCGACGTGCTGACCGTCGAGGACGTGGAGCCGATTCG 640
CCACAACGGCGCCCGCCACCAACCCGGCGTCGCCGTCGGC 680
GGTGCAAGCCAAAGACACCGCGTTCTACATCTTCACCTCG 720
GGCACCACCGGATTTCCCAAGGCCAGTGTCATGACGCATC 760
ATCGGTGGCTGCGGCGGCTGGCCGTCTTCGGAGGGATGGG 800
GCTGCGGCTGAAGGGTTCCGACACGGCTCTACAGCTGCCTG 840
CCGCTGTACCACAACAACGCGTTAACGGTCGCGGTGTCGT 880
CGGTGATCAATTCTGGGGCGACCCTGGCGCTGGGTAAGTC 920
GTTTTCGGCGTCGCGGTTCTGGGATGAGGTGATTGCCAAC 960
CGGCGCGACGGCGTTCGTCTACATCGGCGAAATCTGCCGTT 1000
ATCTGCTCAACCAGCCGGCCAAGCCGACCGACCGTGCCCA 1040
CCAGGTGCGGGTGATCTGCGGTAACGGGCTGCGGCCGGAG 1080
ATCTGGGATGAGTTCACCACCCGCTTCGGGGTCGCGCGGG 1120
TGTGCGAGTTCTACGCCGCCAGCGAAGGCAACTCGGCCTT 1160
TATCAACATCTTCAACGTGCCCAGGACCGCCGGGGTATCG 1200
CCGATGCCGCTTGCCTTTGTGGAATACGACCTGGACACCG 1240
GCGATCCGCTGCGGGATGCCAGCGGGCGAGTGCGTCGGGT 1280
ACCCGACGGTGAACCCGGCCTGTTGCTTAGCCGGGTCAAC 1320
CGGCTGCAGCCGTTCGACGGCTACACCGACCCGGTTGCCA 1360
GCGAAAAGAAGTTGGTGCGCAACGCTTTTCGAGATGGCGA 1400
CTGTTGGTTCAACACCGGTGACGTGATGAGCCCGCAGGGC 1440
ATGGCCCATGCCGCCTTCGTCGATCGGCTGGGCGACACCT 1480
TCCGCTGGAAGGCCGAGAATGTCGCCACCACTCAGGTCGA 1520
AGCGGCACTGGCCTCCGACCAGACCGTCGAGGAGTGCACG 1560
GTCTACGGCGTCCAGATTCCGGCCACCGGCGGGCGCGCCG 1600
GAATGGCCGCGATCACACTGCGGGCTGGCGCCGAATTCGA 1640
CGGCCAGGCGCTGGCCCGAACGGTTTACGGTCACTTGCCC 1680
GGCTATGCACTTCCGCTCTTTGTTCGGGTAGTGCGGTCGC 1720
TGGCGCACACCACGACGTTCAAGAGTCGCAAGGTGGAGTT 1760
GCGCAACCAGGCCTATGGCGCCGACATCGAGGATCCGCTG 1800
TACGTACTGGCCGGCCCCGACGAAGGATATGTGCCGTACT 1840
ACGCCGAATACCCTGAGGAGGTTTCGCTCGGAAGGCGACC 1880
GCAGGGCTAGCGGATTCCGGCGCAGTCTCGATACCCGCA 1920
CTGGACGCTCGACGGTAACCAGGCACTATGGATGCGTGCG 1960
TTCAACACCGCCGGCCTCAGCCCGGTCGTTCAACACCGCCG 2000
GCGTTAG 2007

Figure 24B

mtFATP protein sequence

```
msdyyggahttvrlidlatrrprvladtpvivrgamtgll 40
arpnskasigtvfqdraarygdrvflkfgdqgltyrdana 80
tanryaavlaargvgpgdvvgimlrnspstvlamlatvkc 120
gaiagmlnyhqrgevlahslglldakvliaesdlvsavae 160
cgasrgrvagdvltvedverfattapatrpasasavqakd 200
tafyiftsgttgfpkasvmthhrwlralavfggmglrlkg 240
sdtlysclplyhnnaltvavssvinsgatlalgksfsasr 280
fwdevianratafvyigeicryllnqpakptdrahqvrvi 320
cgnglrpeiwdefttrfgvarvcefyaasegnsafinifn 360
vprtagvspmplafveydldtgdplrdasgrvrrvpdgep 400
glllsrvnrlqpfdgytdpvasekklvrnafrdgdcwfnt 440
gdvmspqgmghaafvdrlgdtfrwkgenvattqveaalas 480
dqtveectvygvqiprtggragmaaitlragaefdgqala 520
rtvyghlpgyalplfvrvvgslahtttfksrkvelrnqay 560
gadiedplyvlagpdegyvpyyaeypeevslgrrpqg 597
```

Figure 25

hsFATP1

```
1       tcg acc cac ggc gtc cgg gac ccc aaa gca gaa gcc cgc aca gta ggc aca gcg cac cca
61      aga agg gtc cag gag tct gca gaa aca gaa agg tcc ccg gcc tca gcc tcc tag tcc ctg
121     cct gcc tcc tgc ctg agc ttc tgg gag act gaa ggc acg gct tgc agc ttc agg acg cgg
                                                                        M   R
181     gct ccg ggt gcg ggc gcg gcc tcg gtg gtc tcg ctg gcg ctg ttg tgg ctg ctg ggg ctg
        A   P   G   A   G   A   A   S   V   V   S   L   A   L   L   W   L   L   G   L
241     ccg tgg acc tgg agc gcg gca gcg gcg ctc ggc gtg tac gtg ggc agc ggc ggc tgg cgc
        P   W   T   W   S   A   A   A   A   L   G   V   Y   V   G   S   G   G   W   R
301     ttc ctg cgc atc gtc tgc aag acc gcg agg cga gac ctc ttc ggt ctc tct gtg ctg atc
        F   L   R   I   V   C   K   T   A   R   R   D   L   F   G   L   S   V   L   I
361     cgc gtg cgc ctg gag ctg cgg cgg cac cag cgt gcc ggc cac acc atc ccg cgc atc ttt
        R   V   R   L   E   L   R   R   H   Q   R   A   G   H   T   I   P   R   I   F
421     cag gcg gta gtg cag cga cag ccc gag cgc ctg gcg ctg gtg gat gcc ggg acc ggc gag
        Q   A   V   V   Q   R   Q   P   E   R   L   A   L   V   D   A   G   T   G   E
481     tgc tgg acc ttt gcg cag ctg gac gcc tac tcc aat gcg gta gcc aac ctc ttc cgc cag
        C   W   T   F   A   Q   L   D   A   Y   S   N   A   V   A   N   L   F   R   Q
541     ctg ggc ttc gcg ccg ggc gac gtg gtg gcc atc ttc ctg gag ggc cgg ccg gag ttc gtg
        L   G   F   A   P   G   D   V   V   A   I   F   L   E   G   R   P   E   F   V
601     ggg ctg tgg ctg ggc ctg gcc aag gcg ggc atg gag gcc gcg ctg ctc aac gtg aac ctg
        G   L   W   L   G   L   A   K   A   G   M   E   A   A   L   L   N   V   N   L
661     cgg cgc gag ccc ctg gcc ttc tgc ctg ggc acc tcg ggc gct aag gcc ctg atc ttt gga
        R   R   E   P   L   A   F   C   L   G   T   S   G   A   K   A   L   I   F   G
721     gga gaa atg gtg gcg gcg gtg gcc gaa gtg agc ggg cat ctg ggg aaa agt ttg atc aag
        G   E   M   V   A   A   V   A   E   V   S   G   H   L   G   K   S   L   I   K
781     ttc tgc tct gga gac ttg ggg ccc gag ggc atc ttg ccg gac acc cac ctc ctg gac ccg
        F   C   S   G   D   L   G   P   E   G   I   L   P   D   T   H   L   L   D   P
841     ctg ctg aag gag gcc tct act gcc ccc ttg gca cag atc ccc agc aag ggc atg gac gat
        L   L   K   E   A   S   T   A   P   L   A   Q   I   P   S   K   G   M   D   D
901     cgt ctt ttc tac atc tac acg tcg ggg acc acc ggg ctg ccc aag gct gcc att gtc gtg
        R   L   F   Y   I   Y   T   S   G   T   T   G   L   P   K   A   A   I   V   V
961     cac agc agg tac tac cgc atg gca gcc ttc ggc cac cac gcc tac cgc atg cag gcg gcc
        H   S   R   Y   Y   R   M   A   A   F   G   H   H   A   Y   R   M   Q   A   A
1021    gac gtg ctc tat gac tgc ctg ccc ctg tac cac tcg gca gga aac atc atc ggc gtg ggg
        D   V   L   Y   D   C   L   P   L   Y   H   S   A   G   N   I   I   G   V   G
1081    cag tgt ctc atc tat ggg ctg aca gtc gtc ctc cgc aag aaa ttc tcg gcc agc cgc ttc
        Q   C   L   I   Y   G   L   T   V   V   L   R   K   K   F   S   A   S   R   F
1141    tgg gac gac tgc atc aag tac aac tgc acg gtg gtt cag tac atc ggg gag atc tgc cgc
        W   D   D   C   I   K   Y   N   C   T   V   V   Q   Y   I   G   E   I   C   R
1201    tac ctg ctg aag cag ccg gtg cgc gag gcg gag agg cga cac cgc gtg cgc ctg gcg gtg
        Y   L   L   K   Q   P   V   R   E   A   E   R   R   H   R   V   R   L   A   V
1261    ggg aac ggg ctg cgt cct gcc atc tgg gag gag ttc acg gag cgc ttc ggc gta cgc caa
        G   N   G   L   R   P   A   I   W   E   E   F   T   E   R   F   G   V   R   Q
1321    atc ggg gag ttc tac ggc gcc acc gag tgc aac tgc agc att gcc aac atg gac ggc aag
        I   G   E   F   Y   G   A   T   E   C   N   C   S   I   A   N   M   D   G   K
1381    gtc ggc ttc tgt ggt ttc aac agc cgc atc ctg ccc cac gtg tac ccc atc cgg ctg gtg
        V   G   S   C   G   F   N   S   R   I   L   P   H   V   Y   P   I   R   L   V
1441    aag gtc aat gag gac aca atg gag ctg ctg cgg gat gcc cag ggc ctc tgc atc ccc tgc
        K   V   N   E   D   T   M   E   L   L   R   D   A   Q   G   L   C   I   P   C
1501    cag gcc ggg gag cct ggc ctc ctt gtg ggt cag atc aac caa cag gac ccg ctg cgc cgc
        Q   A   G   E   P   G   L   L   V   G   Q   I   N   Q   Q   D   P   L   R   R
1561    ttc gat ggc tat gtc agc gag agc gcc acc agc aag aag atc gcc cac agc gtc ttc agc
        F   D   G   Y   V   S   E   S   A   T   S   K   K   I   A   H   S   V   F   S
1621    aag ggc gac agc gcc tac ctc tca ggt gac gtg cta gtg atg gat gag ctg ggc tac atg
        K   G   D   S   A   Y   L   S   G   D   V   L   V   M   D   E   L   G   Y   M
1681    tac ttc cgg gac cgt agc ggg gac acc ttc cgc tgg cga ggg gag aac gtc tcc acc acc
        Y   F   R   D   R   S   G   D   T   F   R   W   R   G   E   N   V   S   T   T
1741    gag gtg gag ggc gtg ctg agc cgc ctg ctg ggc cag aca gac gtg gcc gtc tat ggg gtg
        E   V   E   G   V   L   S   R   L   L   G   Q   T   D   V   A   V   Y   G   V
1801    gct gtt cca gga gtg gag ggt aag gca ggg atg gcg gcc gtc gca gac ccc cac agc ctg
        A   V   P   G   V   E   G   K   A   G   M   A   A   V   A   D   P   H   S   L
1861    ctg gac ccc aac gcg ata tac cag gag ctg cag aag gtg ctg gca ccc tat gcc cgg ccc
        L   D   P   N   A   I   Y   Q   E   L   Q   K   V   L   A   P   Y   A   R   P
1921    atc ttc ctg cgc ctc ctg ccc cag gtg gac acc aca ggc acc ttc aag atc cag aag acg
        I   F   L   R   L   L   P   Q   V   D   T   T   G   T   F   K   I   Q   K   T
1981    agg ctg cag cga gag ggc ttt gac cca cgc cag acc tca gac cgg ctc ttc ttc ctg gac
        R   L   Q   R   E   G   F   D   P   R   Q   T   S   D   R   L   F   F   L   D
2041    ctg aag cag ggc cac tac ctg ccc tta aac gag gca gtc tac act cgc atc tgc tcg ggc
        L   K   Q   G   H   Y   L   P   L   N   E   A   V   Y   T   R   I   C   S   G
2101    gcc ttc gcc ctc tga agc tgt tcc tct act ggc cac aaa ctc tgg gcc tgg tgg gag agg
        A   F   A   L   *
2161    cca gct tga gcc aga cag cgc tgc cca ggg gtg gcc gcc tag tac aca ccc acc tgg ccg
2221    agc tgt acc tgg cac ggc cca tcc tgg act gag aaa ctg gaa cct cag agg aac ccg tgc
2281    ctc tct gct gcc ttg gtg ccc ctg tgt ctg cct cct ctc cct gct ttt cag cct ctg tcc
2341    cct tcc atc cct gtc cct gtc tgg cct taa ctc ttc cct ctc ttt ctt ttc ttt cct tct
2401    ttc ttt ttt ttt aag ata gag tct cac tct gct gcc cgg gct aga gtg cag tgg tgg gat
2461    ctc ggc tca ctg caa cct ctg cct cct ggg gtt caa gtg atc ctc cca cct cag cct cct
2521    gag tag ctg gga tta cag gca ccc gcc acc acg tcc agc taa ttt tta tat ttt tag tag
2581    aga cgg ggt ttc acc atg ttg gtc agg ctg gtc ttg aac tcc tga cct cag gtg atc cgc
2641    tgg cct cgg cct ccc aga gtg ctg gga tta tag gcg tga gcc tct ggc ccg gcc ttt cct
2701    ttt tcc tct cct ctc ctg ccg aga gtg gaa cac acg tgt cct ggg agc tgc atc ttg tgt
2761    agg gtc cag ctg ctt ttg ggg act gca gga atc atc tcc cct ggg ccc tgg act cgg act
2821    ggg gcc tcc cca cct ccc tct cgg ctg tgc ctt acg gag ccc caa tcc agg cct cct gtg
2881    gct gtt ggg ttc cag atg ctg cag ctc cat gtg act tcc aag cag gcc ctc cgc cct ccc
2941    tgc tga atg gag gag ccg ggg gtc ccc cag gcc aac tgg aaa atc tcc cag gct agg cca
3001    act gcc ttt tgc act tcc ccg ttc ctg tca cat ttc ccc agc ccc acc ttc ccc tcc tga
3061    tgc cct gaa agc ttc cgg aat tga ctg tga cca ctt gga tgt cac cac tgt cag ccc ctg
3121    cct tga tgt ccc cac tta gcc atc tcc atg gag ctc ctg ctg gag ggc cct gaa ccc tgc
3181    act gcg tgg ctg ccc agc cag ctg cct cct gtc ctg gga gga ggc ctc ctg ggt gtc ctc
3241    atc tgg tgt gtc tac tgg agg gtc cca cag gag agg cag cag agg ggt cag ggg agg tct
3301    cct gcc ggg ggt tgg cct ctc aag cct cag ggg ttc tag cct gtt gaa tat acc cca cct
3361    ggt ggg tgg ccc ctc cga tgt ccc cac tga tgg ctc tga cac cgt gtt ggt ggc gat gtc
3421    cca gac aat ccc acc agg acg gcc cag aca tcc cta ctg gct tcg ctg gtg gct cat ctc
3481    gaa cat cca cgc cag cct ttc tgg ggc cgg cca ccc agg ccg cct gtc cgt ctg tcc tcc
3541    ctc cag cag cac ccc ctg gcc cct gga gtg gtg ggg cca tgg caa gag aca ccg tgg cgt
3601    ctc atg tga acc ttc ctg ggc act gtg gtt tta ttt ccc aat tga ttt aag aaa taa acc
3661    tga aga ccg tct ggt gaa aaa aaa aaa aaa aaa agg gcg gcc gc
```

Figure 26

hsFATP4

```
1       cga ccc acg cgt ccg ggc ggg cgg ggc cgg gcg gcg ggc ggg gct ggc ggg gcg gcc ggg
61      cca tgc agg gcg cag agc cgg cta aac cct gct gag acc cgg ctc cgt gcg tcc agg ggc
121     ggc taa tgc ccc tca cgc tgt cta cgc tgc tgc aac cgg gcc gca tct gga cgg ggc gcc
181     gcg cgg cgg agc cga cgc cgg gcc aca atg ctg ctt gga gcc tct ctg gtg ggg gtg ctg
                                            M   L   L   G   A   S   L   V   G   V   L
241     ctg ttc tcc aag ctg gtg ctg aaa ctg ccc tgg acc cag gtg gga ttc tcc ctg ttg ttc
        L   F   S   K   L   V   L   K   L   P   W   T   Q   V   G   F   S   L   L   F
301     ctc tac ttg gga tct ggc ggc tgg cgc ttc atc cgg gtc ttc atc aag acc atc agg cgc
        L   Y   L   G   S   G   G   W   R   F   I   R   V   F   I   K   T   I   R   R
361     gat atc ttt ggc ggc ctg gtc ctc ctg aag gtg aag gca aag gtg cga cag tgc ctg cag
        D   I   F   G   G   L   V   L   L   K   V   K   A   K   V   R   Q   C   L   Q
421     gag cgg cgg aca gtg ccc att ttg ttt gcc tct acc gtt cgg cgc cac ccc gac aag acg
        E   R   R   T   V   P   I   L   F   A   S   T   V   R   R   H   P   D   K   T
481     gcc ctg atc ttc gag ggc aca gat acc cac tgg acc ttc cgc cag ctg gat gag tac tca
        A   L   I   F   E   G   T   D   T   H   W   T   F   R   Q   L   D   E   Y   S
541     agc agt gta gcc aac ttc ctg cag gcc cgg ggc ctg gcc tcg ggc gat gtg gct gcc atc
        S   S   V   A   N   F   L   Q   A   R   G   L   A   S   G   D   V   A   A   I
601     ttc atg gag aac cgc aat gag ttc gtg ggc cta tgg ctg ggc atg gcc aag ctc ggt gtg
        F   M   E   N   R   N   E   F   V   G   L   W   L   G   M   A   K   L   G   V
661     gag gca gcc ctc atc aac acc aac ctg cgg cgg gat gct ctg ctc cac tgc ctc acc acc
        E   A   A   L   I   N   T   N   L   R   R   D   A   L   L   H   C   L   T   T
721     tcg cgc gca cgg gcc ctt gtc ttt ggc agc gaa atg gcc tca gcc atc tgt gag gtc cat
        S   R   A   R   A   L   V   F   G   S   E   M   A   S   A   I   C   E   V   H
781     gcc agc ctg gac ccc tcg ctc agc ctc ttc tgc tct ggc tcc tgg gag ccc ggt gcg gtg
        A   S   L   D   P   S   L   S   L   F   C   S   G   S   W   E   P   G   A   V
841     cct cca agc aca gaa cac ctg gac cct ctg ctg aaa gat gct ccc aag cac ctt ccc agt
        P   P   S   T   E   H   L   D   P   L   L   K   D   A   P   K   H   L   P   S
901     tgc cct gac aag ggc ttc aca gat aaa ctg ttc tac atc tac aca tcc ggc acc aca ggg
        C   P   D   K   G   F   T   D   K   L   F   Y   I   Y   T   S   G   T   T   G
961     ctg ccc aag gcc gcc atc gtg gtg cac agc agg tat tac cgc atg gct gcc ctg gtg tac
        L   P   K   A   A   I   V   V   H   S   R   Y   Y   R   M   A   A   L   V   Y
1021    tat gga ttc cgc atg cgg ccc aac gac atc gtc tat gac tgc ctc ccc ctc tac cac tca
        Y   G   F   R   M   R   P   N   D   I   V   Y   D   C   L   P   L   Y   H   S
1081    gca gga aac atc gtg gga atc ggc cag tgc ctg ctg cat ggc atg acg gtg gtg att cgg
        A   G   N   I   V   G   I   G   Q   C   L   L   H   G   M   T   V   V   I   R
1141    aag aag ttc tca gcc tcc cgg ttc tgg gac gat tgt atc aag tac aac tgc acg att gtg
        K   K   F   S   A   S   R   F   W   D   D   C   I   K   Y   N   C   T   I   V
1201    cag tac att ggt gaa ctg tgc cgc tac ctc ctg aac cag cca ccg cgg gag gca gaa aac
        Q   Y   I   G   E   L   C   R   Y   L   L   N   Q   P   P   R   E   A   E   N
1261    cag cac cag gtt cgc atg gca cta ggc aat ggc ctc cgg cag tcc atc tgg acc aac ttt
        Q   H   Q   V   R   M   A   L   G   N   G   L   R   Q   S   I   W   T   N   F
1321    tcc agc cgc ttc cac ata ccc cag gtg gct gag ttc tac ggg gcc aca gag tgc aac tgt
        S   S   R   F   H   I   P   Q   V   A   E   F   Y   G   A   T   E   C   N   C
1381    agc ctg ggc aac ttc gac agc cag gtg ggg gcc tgt ggt ttc aat agc cgc atc ctg tcc
        S   L   G   N   F   D   S   Q   V   G   A   C   G   F   N   S   R   I   L   S
1441    ttc gtg tac ccc atc cgg ttg gta cgt gtc aac gag gac acc atg gag ctg atc cgg ggg
        F   V   Y   P   I   R   L   V   R   V   N   E   D   T   M   E   L   I   R   G
1501    ccc gac ggc gtc tgc att ccc tgc cag cca ggt gag ccg ggc cag ctg gtg ggc cgc atc
        P   D   G   V   C   I   P   C   Q   P   G   E   P   G   Q   L   V   G   R   I
1561    atc cag aaa gac ccc ctg cgc cgc ttc gat ggc tac ctc aac cag ggc gcc aac aac aag
        I   Q   K   D   P   L   R   R   F   D   G   Y   L   N   Q   G   A   N   N   K
1621    aag att gcc aag gat gtc ttc aag aag ggg gac cag gcc tac ctt act ggt gat gtg ctg
        K   I   A   K   D   V   F   K   K   G   D   Q   A   Y   L   T   G   D   V   L
1681    gtg atg gac gag ctg ggc tac ctg tac ttc cga gac cgc act ggg gac acg ttc cgc tgg
        V   M   D   E   L   G   Y   L   Y   F   R   D   R   T   G   D   T   F   R   W
1741    aaa ggt gag aac gtg tcc acc acc gag gtg gaa ggc aca ctc agc cgc ctg ctg gac atg
        K   G   E   N   V   S   T   T   E   V   E   G   T   L   S   R   L   L   D   M
1801    gct gac gtg gcc gtg tat ggt gtc gag gtg cca gga acc gag ggc cgg gcc gga atg gct
        A   D   V   A   V   Y   G   V   E   V   P   G   T   E   G   R   A   G   M   A
1861    gct gtg gcc agc ccc act ggc aac tgt gac ctg gag cgc ttt gct cag gtc ttg gag aag
        A   V   A   S   P   T   G   N   C   D   L   E   R   F   A   Q   V   L   E   K
1921    gaa ctg ccc ctg tat gcg cgc ccc atc ttc ctg cgc ctc ctg cct gag ctg cac aaa aca
        E   L   P   L   Y   A   R   P   I   F   L   R   L   L   P   E   L   H   K   T
1981    gga acc tac aag ttc cag aag aca gag cta cgg aag gag ggc ttt gac ccg gct att gtg
        G   T   Y   K   F   Q   K   T   E   L   R   K   E   G   F   D   P   A   I   V
2041    aaa gac ccg ctg ttc tat cta gat gcc cag aag ggc cgc tac gtc ccg ctg gac caa gag
        K   D   P   L   F   Y   L   D   A   Q   K   G   R   Y   V   P   L   D   Q   E
2101    gcc tac agc cgc atc cag gca ggc gag gag aag ctg tga ttc ccc cca tcc ctc tga ggg
        A   Y   S   R   I   Q   A   G   E   E   K   L   *
2161    ccg gcg gat gct gga tcc gga gcc cca ggt tcc gcc cca gag cgg tcc tgg aca agg cca
2221    gac caa agc aag cag ggc ctg gca cct cca tcc tga ggt gct gcc cct cca tcc aaa act
2281    gcc aag tga ctc att gcc ttc cca acc ctt cca gag gct ttc tgt gaa agt ctc atg tcc
2341    aag ttc cgt ctt ctg ggc tgg gca ggc cct ctg gtt ccc agg ctg aga ctg acg ggt ttt
2401    ctc agg atg atg tct tgg gtg agg gta ggg aga gga caa ggg gtc acc gag ccc ttc cca
2461    gag agc agg gag ctt ata aat gga acc aga gca gaa gtc ccc aga ctc agg aag tca aca
2521    gag tgg gca ggg aca gtg gta gca tcc atc tgg tgg cca aag aga atc gta gcc cca gag
2581    ctg ccc aag ttc act ggg ctc cac ccc cac ctc cag gag ggg agg aga gga cct gac atc
2641    tgt agg tgg ccc ctg atg ccc cat cta cag cag gag gtc agg acc acg ccc ctg gcc tct
2701    ccc cac tcc ccc atc ctc ctc cct ggg tgg ctg cct gat tat ccc tca ggc agg gcc tct
2761    cag tcc ttg tgg gtc tgt gtc acc tcc atc tca gtc ttg gcc tgg cta tga ggg gag gag
2821    gaa tgg gag agg ggg ctc agg ggc caa taa act ctg cct tga gtc ctc cta aaa aaa aaa
2881    aaa aaa aaa aaa aaa aaa aaa aaa aaa ggg cgg ccg c
```

Figure 27

Protein sequence 646 a.a. MRAPGAGAASVV ... VYTRICSGAFAL

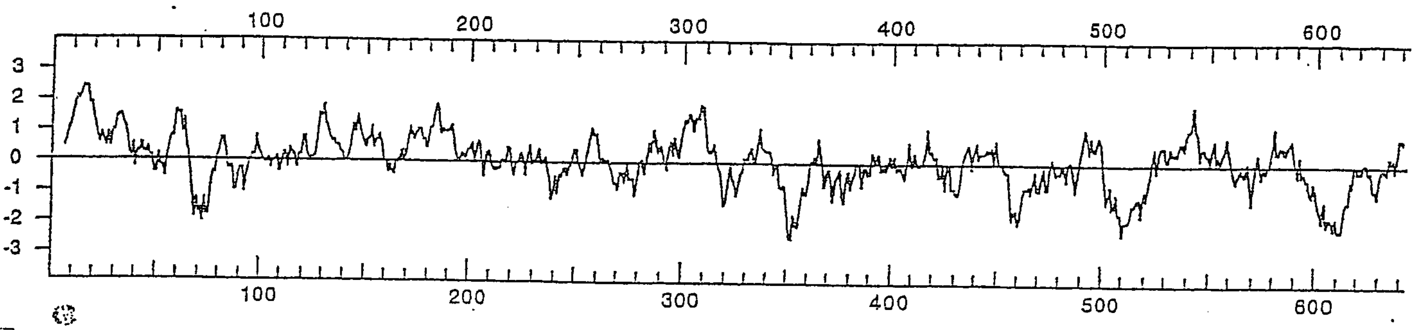


Figure 28A

Protein sequence 646 a.a. MRAPGAGAASVV ... VYTRICSGAFAL

646 Amino Acids MW : 71062 Dalton

		n	n(%)	MW	MW(%)
A ala	alanine	64	9.9	4546	6.4
C cys	cysteine	15	2.3	1545	2.2
D asp	aspartic acid	30	4.6	3450	4.9
E glu	glutamic acid	31	4.8	4000	5.6
F phe	phenylalanine	29	4.5	4264	6.0
G gly	glycine	63	9.8	3592	5.1
H his	histidine	13	2.0	1781	2.5
I ile	isoleucine	29	4.5	3279	4.6
K lys	lysine	22	3.4	2818	4.0
L leu	leucine	77	11.9	8707	12.3
M met	methionine	11	1.7	1441	2.0
N asn	asparagine	15	2.3	1710	2.4
P pro	proline	29	4.5	2814	4.0
Q gln	glutamine	25	3.9	3201	4.5
R arg	arginine	49	7.6	7648	10.8
S ser	serine	33	5.1	2872	4.0
T thr	threonine	27	4.2	2728	3.8
V val	valine	51	7.9	5052	7.1
W trp	tryptophan	9	1.4	1674	2.4
X ukw	unknown	-	-		
Y tyr	tyrosine	24	3.7	3913	5.5
Z ---	STOP	-	-		

Figure 28B

66E260"h0550h60

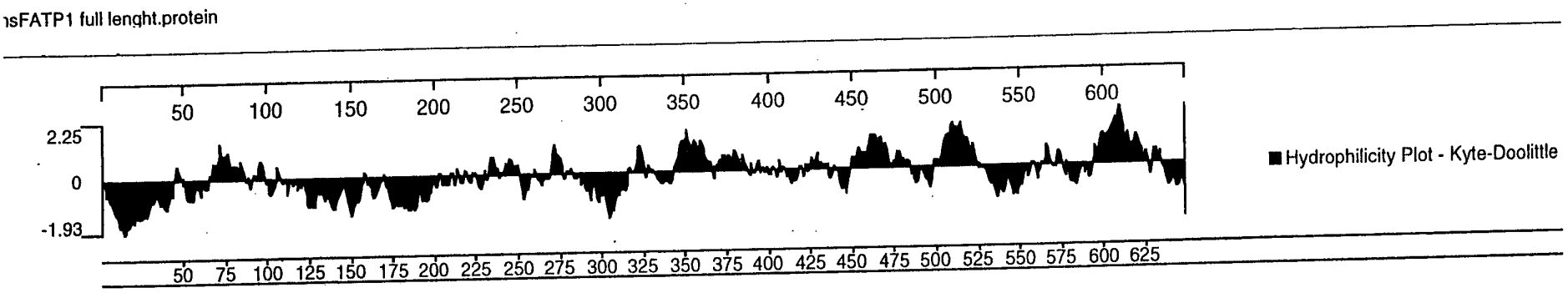


Figure 28C

hsFATP4.pep -> KD Hydrophobicity <11/1>

Protein sequence 643 a.a. MLLGASLVGVLL ... AYSRIQAGEEKL

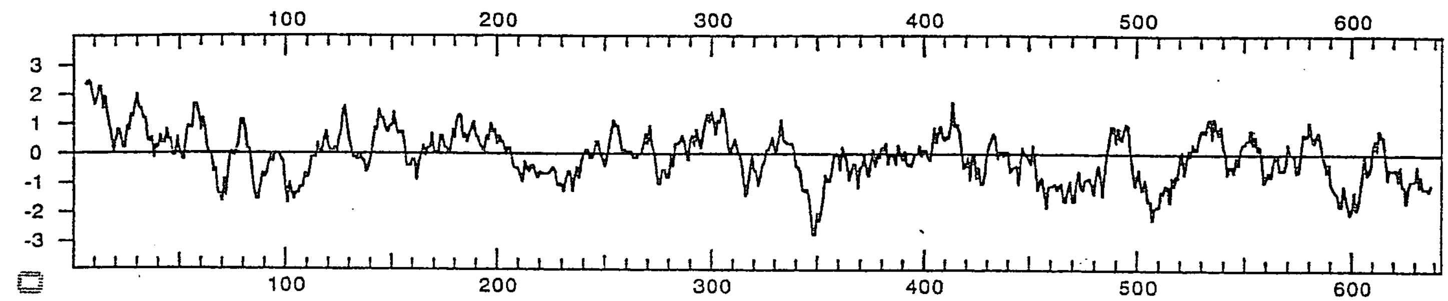


Figure 29A

hsFATP4.pep -> A. A. Usage

Protein sequence 643 a.a. MLLGASLVGVLL ... AYSRIQAGEEKL

643 Amino Acids MW : 72018 Dalton

			n	n(%)	MW	MW(%)
A	ala	alanine	46	7.2	3267	4.5
C	cys	cysteine	16	2.5	1648	2.3
D	asp	aspartic acid	33	5.1	3795	5.3
E	glu	glutamic acid	33	5.1	4258	5.9
F	phe	phenylalanine	34	5.3	5000	6.9
G	gly	glycine	54	8.4	3079	4.3
H	his	histidine	12	1.9	1644	2.3
I	ile	isoleucine	30	4.7	3392	4.7
K	lys	lysine	31	4.8	3970	5.5
L	leu	leucine	76	11.8	8594	11.9
M	met	methionine	12	1.9	1572	2.2
N	asn	asparagine	21	3.3	2394	3.3
P	pro	proline	31	4.8	3008	4.2
Q	gln	glutamine	23	3.6	2945	4.1
R	arg	arginine	45	7.0	7024	9.8
S	ser	serine	35	5.4	3046	4.2
T	thr	threonine	32	5.0	3233	4.5
V	val	valine	46	7.2	4557	6.3
W	trp	tryptophan	8	1.2	1488	2.1
X	ukw	unknown	-	-		
Y	tyr	tyrosine	25	3.9	4076	5.7
Z	---	STOP	-	-		

Figure 29B

hsFATP4 full length. protein

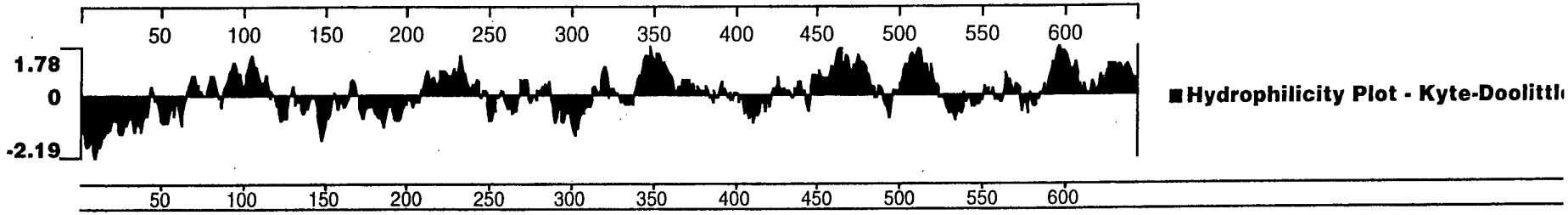


Figure 29C

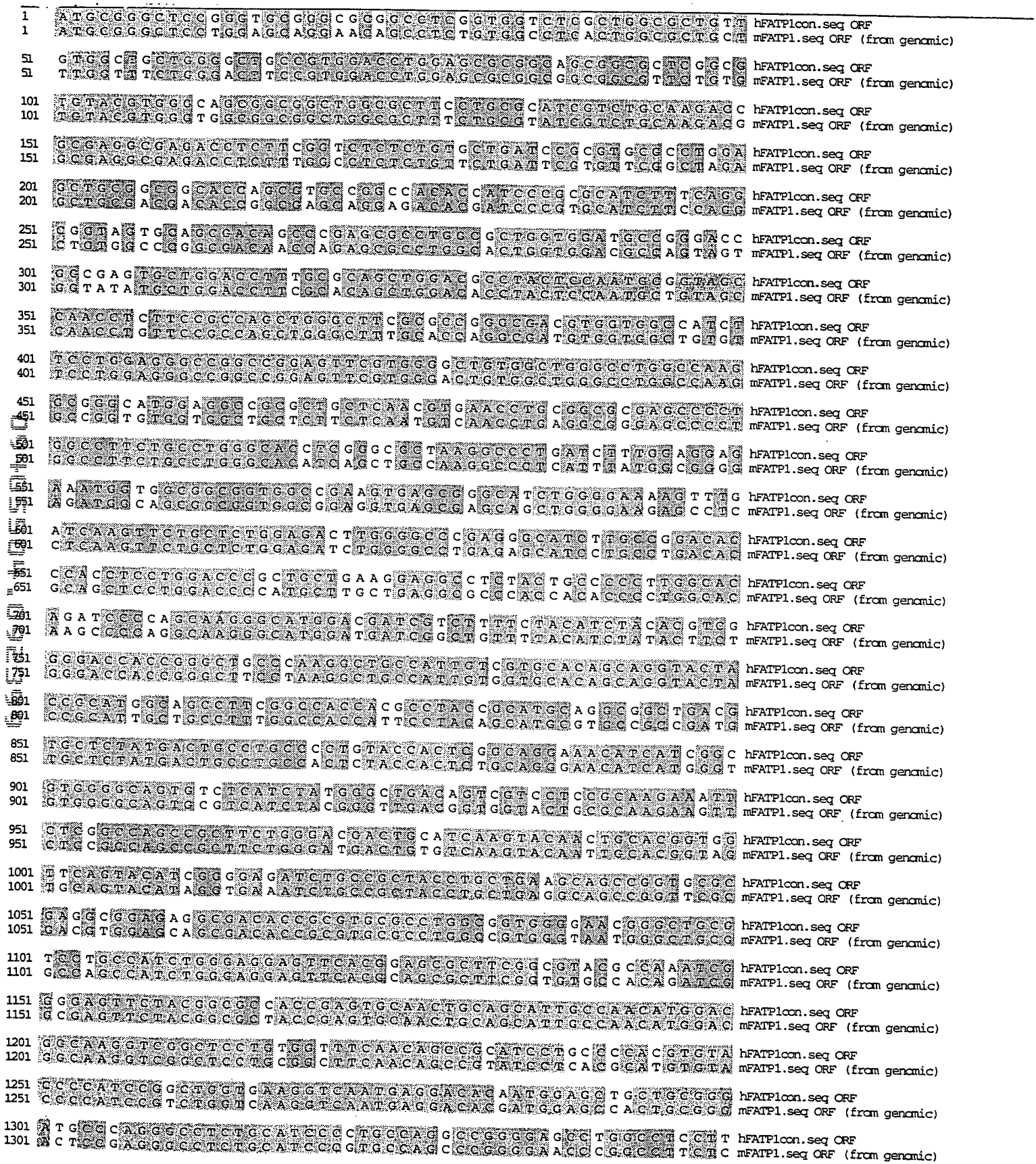

1 ATGCGGGCTCCGGGTGCGGGCGCGGCCTCGGTGGTCTCGCTGGCGCTGTT hFATP1con.seq ORF
1 ATGCGGGCTCCTGGAGCAGGAAGAGCCTCTGTGGCCTCACTGGCGCTGCT mFATP1.seq ORF (from genomic)
51 GTGGCHGCTGGGGCTGCCGTGGACCTGGAGCGCGGGAGCGGCGCTCGGCG hFATP1con.seq ORF
51 TTGGCTTTCTGGGACCTCCGTGGACCTGGAGCGCGGCGGCGCGCTTCTGTG mFATP1.seq ORF (from genomic)
101 TCTACGTGGGCAGCGGCGGCTGGCGCTTCCTGCGCATCGTCTGCAAGACC hFATP1con.seq ORF
101 TGTACGTGGGTGGCGGCGGCTGGCGCTTTCTGCGTATCGTCTGCAAGACG mFATP1.seq ORF (from genomic)
151 GCGAGGCGAGACCTCTTCGGTCTCTCTGTGCTGATCCGCGTGCGCCTGGA hFATP1con.seq ORF
151 GCGAGCCGAGACCTCTTTGGCCTCTCTGTTCTGATTCGTGTTCGGCTAGA mFATP1.seq ORF (from genomic)
201 GCTGCGGCGCACCAGCGTGCCGGCCACACCATCCCGCGCATCTTTCAGG hFATP1con.seq ORF
201 GCTGCGACGACACCGGCCAGCAGGAGACACGATCCCGTGCATCTTCCAGG mFATP1.seq ORF (from genomic)
251 CGGTAGTGCAGCGACAGCCCGAGCGCCTGGCGCTGGTGGCATGCCGGGACC hFATP1con.seq ORF
251 CTGTGGCCCGGCGCACAACCAGAGCGCCTGGCACTGGTGGACGCCAGTAGT mFATP1.seq ORF (from genomic)
301 GGCGAGTGCTGGACCTTTGCGCAGCTGGACGCCTACTCCAATGCGGTAGC hFATP1con.seq ORF
301 GGTATATGCTGGACCTTCGCACAGCTGGACACCTACTCCAATGCTGTAGC mFATP1.seq ORF (from genomic)
351 CAACCTCTTCCGCCAGCTGGGCTTCGCGCCGGGCGACGTGGTGGCCATCT hFATP1con.seq ORF
351 CAACCTGTTCCGCCAGCTGGGCTTTGCACCAGGCGATGTGGTGGCTGTGT mFATP1.seq ORF (from genomic)
401 TCCTGGAGGGCCGGCCGGAGTTCGTGGGGCTGTGGCTGGGCCTGGCCAAG hFATP1con.seq ORF
401 TCCTGGAGGGCCGGCCGGAGTTCGTGGGACTGTGGCTCGGCCTGGCCAAG mFATP1.seq ORF (from genomic)
451 GCGGGCATGGACGCCGCGCTGCTCAACGTGAACCTGCGGCGCGAGCCCCT hFATP1con.seq ORF
451 GCCGGTGTGGTCGCTGCTCTTCTCAATGTCAACCTGAGGCGGGAGCCCCT mFATP1.seq ORF (from genomic)
501 GGCCTTCTGCCTGGGCACCATCAGCTGGCCAAGGCCCCTGATCTTTGGAGAG hFATP1con.seq ORF
501 GGCCTTCTGCCTGGGCACCATCAGCTGGCCAAGGCCCCTCATTTATGGCCGGG mFATP1.seq ORF (from genomic)
551 AAATGCTGGCGGCGGTGGCCGAAGTGAGCGGGCATCTGGGGAAAAGTTG hFATP1con.seq ORF
551 AGATGCCAGCGGCGGTGCCGGAGGTGAGCGAGCAGCTGGGGAAGAGCCTC mFATP1.seq ORF (from genomic)
601 ATCAAGTTCTGCTCTGGAGACTTGGGGCCCGAGGGCATCTTGCCGGACAC hFATP1con.seq ORF
601 CTCAAGTTCTGCTCTGGAGATCTGGCGCCTGAGAGCATCCTGCCTGACAC mFATP1.seq ORF (from genomic)
651 CCACCTCCTGGACCCGCTGCTGAAGGAGGCCTCTACTGCCCCCTTGGCAC hFATP1con.seq ORF
651 GCAGCTCCTGGACCCCATGCTTGCTGAGGCGCCCACCACACCCTGGCAC mFATP1.seq ORF (from genomic)
701 AGATCCCCAGCAAGGGCATGGACGATCGTCTTTCTACATCTACACGGTCG hFATP1con.seq ORF
701 AAGCCCCAGGCAAGGGCATGGATGATCGGCTGTTTTACATCTATACTTCT mFATP1.seq ORF (from genomic)
751 GGGACCACCGGGCTGCCCAAGGCTGCCATTGTCGTGCACAGCAGGTACTA hFATP1con.seq ORF
751 GGGACCACCGGGCTTCCTAAGGCTGCCATTGTGGTGCACAGCAGGTACTA mFATP1.seq ORF (from genomic)
801 CCGCATGGCAGCCTTCGGCCACCACGCCTACCGCATGCAGGCGGCTGACG hFATP1con.seq ORF
801 CCGCATTGCTGCCTTTGGCCACCATTCCTACAGCATGCGTGCCGCCGATG mFATP1.seq ORF (from genomic)
851 TGCTCTATGACTGCCTGCCCTGTACCACTCGGCAGGAAACATCATCGGC hFATP1con.seq ORF
851 TGCTCTATGACTGCCTGCCACTCTACCACTCTGCAGGGAACATCATGGGT mFATP1.seq ORF (from genomic)
901 GTGGGGCAGTGTCTCATCTATGGGCTGACAGTCGTCCTCCGCAAGAAATT hFATP1con.seq ORF
901 GTGGGGCAGTGCGTCATCTACGGGTTGACGGTGGTACTGCGCAAGAAGTT mFATP1.seq ORF (from genomic)
951 CTCGGCCAGCCGCTTCTGGGACGACTGCATCAAGTACAACTGCACGGTGG hFATP1con.seq ORF
951 CTGCGCCAGCCGCTTCTGGGATGACTGTGTCAAGTACAATTGCACGGTAG mFATP1.seq ORF (from genomic)
1001 GTCAGTACATCGGGGAGATCTGCCGCTACCTGCTGAAGCAGCCGGTGCGC hFATP1con.seq ORF
1001 TGCAGTACATAGGTGAAATCTGCCGCTACCTGCTGAGGCAGCCGGTTCGC mFATP1.seq ORF (from genomic)
1051 GAGCGGAGAGGCGACACCGCGTGCGCCTGGCGGTGGGGAACGGGCTGCG hFATP1con.seq ORF
1051 CACGTGGAGCAGCGACACCGCGTGCGCCTGGCCGTGGGTAATGGGCTGCG mFATP1.seq ORF (from genomic)
1101 TCCTGCCATCTGGGAGGAGTTCACGGGAGCGCTTCGGCGTACGCCAAATCG hFATP1con.seq ORF
1101 GCCAGCCATCTGGGAGGAGTTCACGCCAGCGCTTCGGTGTGCCACAGATCG mFATP1.seq ORF (from genomic)
1151 GGGAGTTCTACGGCGCCCACCGAGTGCAACTGCAGCATTGCCAACATGGAC hFATP1con.seq ORF
1151 GCGAGTTCTACGGCGCCTACCGAGTGCAACTGCAGCATTGCCAACATGGAC mFATP1.seq ORF (from genomic)
1201 GGCAAGGTCGGCTCCTGTGGTTTCAACAGCCGCATCCTGCCCCACGTGTA hFATP1con.seq ORF
1201 GGCAAGGTCGGCTCCTGCGGCTTCAACAGCCGTATCCTCACGCATGTGTA mFATP1.seq ORF (from genomic)
1251 CCCCATCCGGCTGGTGAAGGTCAATGAGGACACGATGGAGCTGCTGCGGG hFATP1con.seq ORF
1251 CCCCATCCGTCTGGTCAAGGTCAATGAGGACACGATGGAGCCACTGCGGG mFATP1.seq ORF (from genomic)
1301 ATGCGCAGGGCCTCTGCATCCCCTGCCAGGCCCGGGGAGCCTGGCCTCCTT hFATP1con.seq ORF
1301 ACTCCGAGGGCCTCTGCATCCCGGTGCCAGCCCGGGGAACCCGGCCTTCTC mFATP1.seq ORF (from genomic)

FIG. 30A

```
1351 GTGGGTCAGATCAACCAACAGGACCCGCTGCGCCGCTTCGATGGCTATGT  hFATP1con.seq ORF
1351 GTGGGCCAGATCAACCAGCAGGACCCTCTGCCGGCGTTTCGATGGTTATGT  mFATP1.seq ORF (from genomic)

1401 CAGCGAGAGCGCCACCAGCAAGAAGATCGCCCACAGCGTCTTCAGCAAGG  hFATP1con.seq ORF
1401 TAGTGACAGTGCCACCAAACAAGAAGATTGCCCACAGCGTTTCCGAAAGG  mFATP1.seq ORF (from genomic)

1451 GCGACAGCGCCTACCTCTCAGGTGACGTGCTAGTGATGGATGAGCTGGGC  hFATP1con.seq ORF
1451 GCGATAGCGCCTACCTCTCAGGTGACGTGCTAGTGATGGACGAGCTGGGC  mFATP1.seq ORF (from genomic)

1501 TACATGTACTTCCGGGACCGTAGCGGGGACACCTTCCGCTGGCGAGGGGA  hFATP1con.seq ORF
1501 TACATGTATTCCGTGACCGCAGCGGGGACACCTTCCGCTGCCGCGGGGA  mFATP1.seq ORF (from genomic)

1551 GAACGTCTCCACCAGCGAGGTGGAGGGCGTGCTGAGCCGCCTGCTGGGCC  hFATP1con.seq ORF
1551 GAACGTGTCCACCACGGAGGTGGAAGCCGTGCTGAGCCGCCTACTGGGCC  mFATP1.seq ORF (from genomic)

1601 AGACAGACGTGGCCGTCTATGGGGTGGCTGTTCCAGGAGTGGAGGGTAAG  hFATP1con.seq ORF
1601 ACACGGACGTGGCTGTATGGGGTGGCTGTGCCAGGAGTGGAGGGGAAA  mFATP1.seq ORF (from genomic)

1651 GCAGGGATGGCGGCCGTCGCAGACCCCCACAGCCTGCTGGACCGCAAGGC  hFATP1con.seq ORF
1651 GCTGGCATGGCAGCCATCGCAGATCCCCACAGCCAGTTGGACCGTAAGTC  mFATP1.seq ORF (from genomic)

1701 GATATACCAGGAGCTGCAGAAGGTGCTGGCACCCTATGCCCGGCGCATCT  hFATP1con.seq ORF
1701 AATGTACCAGGAATTACAGAAGGTTCTTGCATCCTATGCTCGGCCCATCT  mFATP1.seq ORF (from genomic)

1751 TCCTGCGCCCTCCTGCGCCCAGGTGGACACCACAGGCACCTTCAAGATCCAG  hFATP1con.seq ORF
1751 TCCTGCGTCTTCTGCCCCAGGTGGATACCACAGGCACCTTCAAGATCCAG  mFATP1.seq ORF (from genomic)

1801 AAGACGAGGCTGCAGCGAGAGGGCTTTGACGCACGCCAGACCTCAGACCG  hFATP1con.seq ORF
1801 AAGACCCGGCTGCAGCGTGAAGGCTTTGACCCCGCTCAGACCTCAGACAG  mFATP1.seq ORF (from genomic)

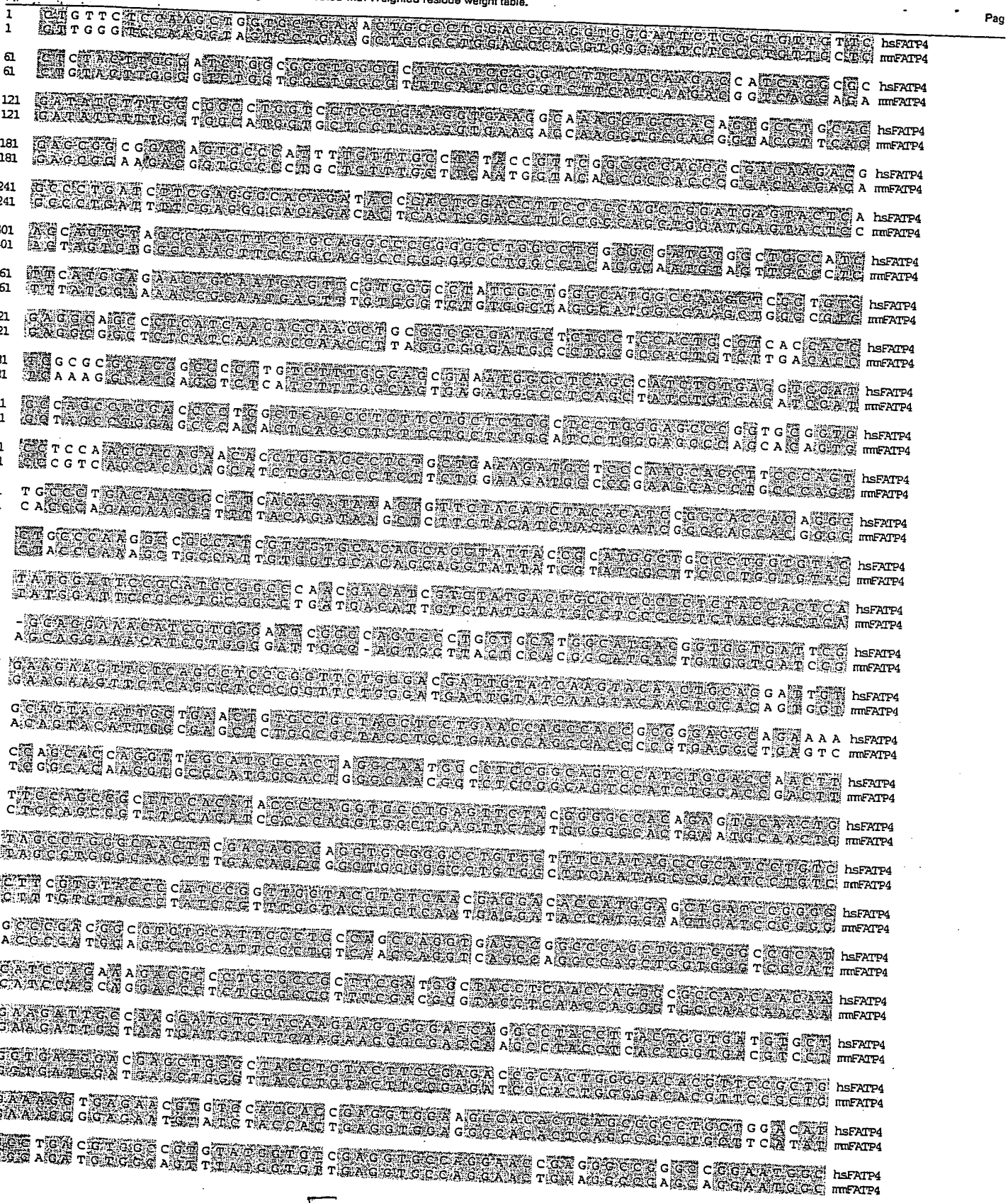
1851 GCTCTTCTTCCTGGACCTGAAGCAGGGCGACTACCTGCCCTTAATGAGG  hFATP1con.seq ORF
1851 GCTCTTCTTTTCTAGACCTGAAGCAGGGAGCTATGTACCCCTGGATGAGA  mFATP1.seq ORF (from genomic)

1901 CAGTCTACACTCGCATCTGCTCGGGCGCCTTCGCCCTGTGA  hFATP1con.seq ORF
1901 GAGTCCATGCCCGCATTTCTGCAGGCGACTTCTCACTC  mFATP1.seq ORF (from genomic)
```

Decoration 'Decoration #1': Shade (with solid bright yellow) residues that match the consensus named 'Consensus #1' exactly.

FIG. 30B

Alignment Report of FATP4 DNA alignment, using Clustal method with Weighted residue weight table.



Fisure 3/A

Alignment Report of FATP4 DNA alignment, using Clustal method with Weighted residue weight table.


```
1620 TCC TGT GGC CAC CCCCA CTG GCAACTGTGACCTGGAG C GCTTTGC TCAG G T CTTG G A GAA hsFATP4
1620 TGG CGT TGC AAC TCCCA TCA GCAACTGTGACCTGGAG A GCTTTGC ACAG A C CTTG A A AAA mmFATP4

1680 GCA A CTGCC C CTGTATGC G CGGCCCATCTTCCTGCGG C TC C TGCCTGAGCTGCACAA A AC hsFATP4
1680 GGA G CTCCC T CTGTATGC C CGGCCCGATCTTCCTGCG T TC T TGCCTGAGCTGCACAA G AC mmFATP4

1740 AGG A ACCT A CAAGTTCCAGAAGACAGAG C T A CGGAAGGAGGGCTTTGACCC G G CT A TTGT hsFATP4
1740 ACG G ACCT T CAAGTTCCAGAAGACAGAG T T G CGGAAGGAGGGCTTTGACCC A T CT G TTGT mmFATP4

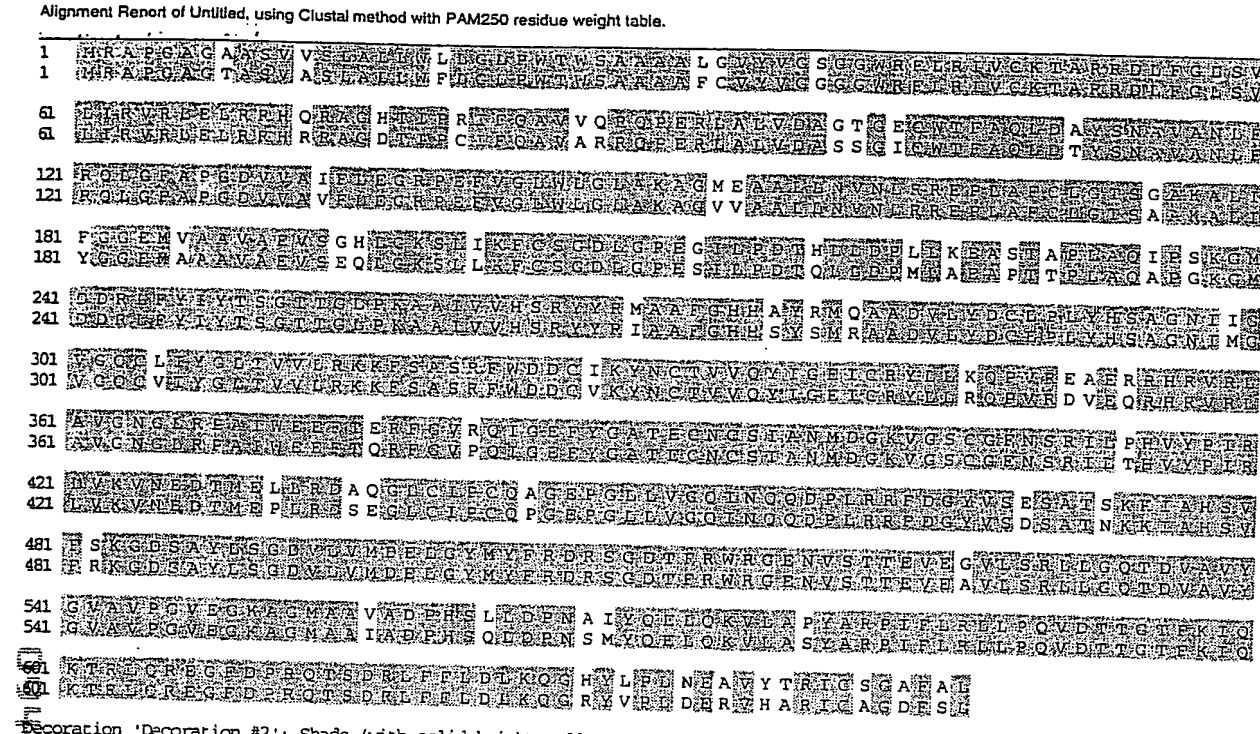
1800 GAAAGACCCGCTGTTCTATCT A GATGC C C A GAAGGGC C GCTACGT C C G G CTGGACCA A GA hsFATP4
1800 GAAAGACCCGCTGTTCTATCT G GATGC T C G GAAGGGC T GCTACGT T G C A CTGGACCA G GA mmFATP4

1860 GGCCTA C A G CCGCATCCAGGCAGGCGAGGAGAAGCTG hsFATP4
1860 GGCCTA T G C CCGCATCCACGCAGGCGAGGACAAGCTG mmFATP4
```

Decoration 'Decoration #1': Shade (with solid bright yellow) residues that match the consensus named 'Consensus #1' exactly.

Figure 31B

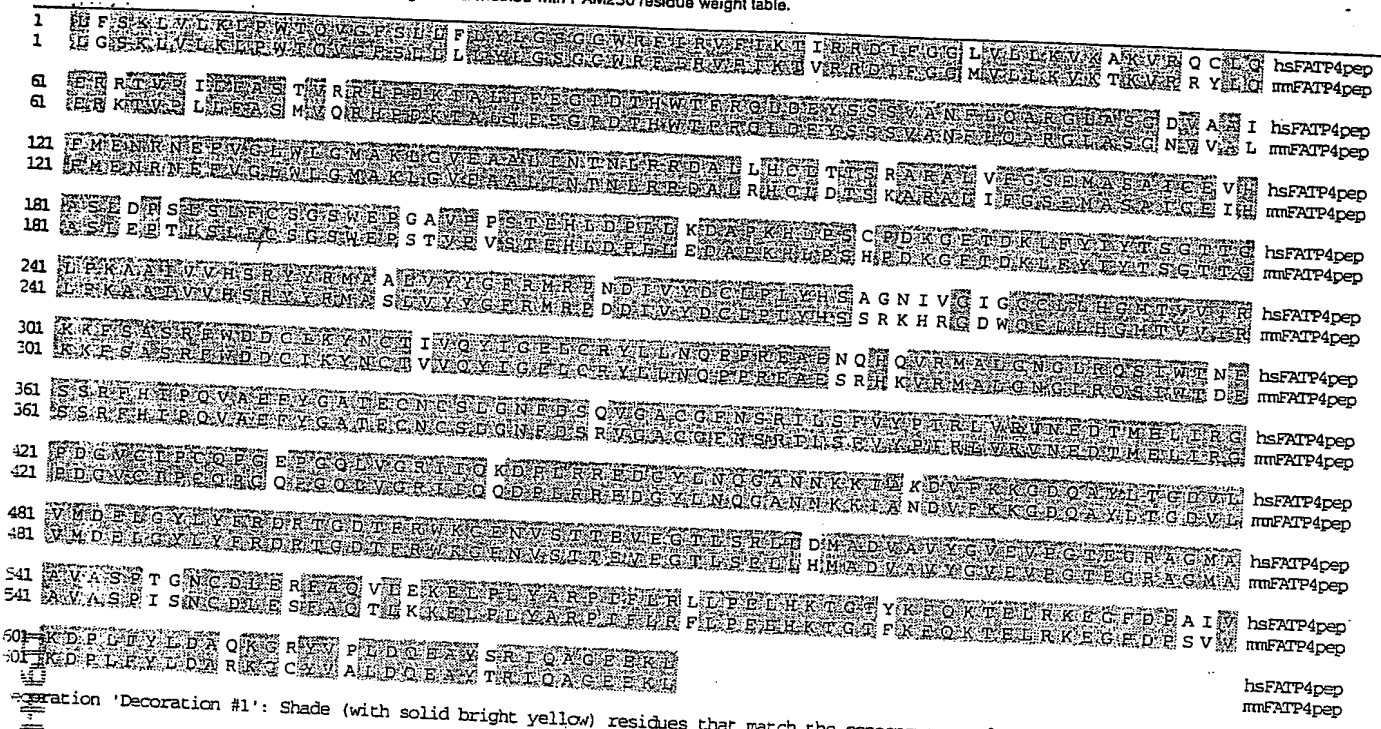
09932950 . 040500



Decoration 'Decoration #2': Shade (with solid bright yellow) residues that match the consensus named 'Consensus #1' exactly.

Figure 32

Alignment Report of FATP4 protein alignment, using Clustal method with PAM250 residue weight table.



Decoration 'Decoration #1': Shade (with solid bright yellow) residues that match the consensus named 'Consensus #1' exactly.

Figure 33

hsFATP6

```
1       aac ggc aag taa gcg caa cgc aat taa tgt gag tag ctc act cat tag gca ccc cag gct
61      tta cac ttt atg ctt ccg ggc tcg tat gtt gtg tgg aat tgt gag cgg ata cca att tca
121     cac agg aac cag cta tga cat gat tac gaa ttt aat acg act cac tat agg gaa ttt ggc
181     cct cga ggc caa gaa ttc ggc acg agg ggt gct gag ccc ctg cgc ggt ttc tgg tgc gta
241     gag act gta aat cgc tgc gct tct cag tca tca tca tcc cag ctt ttc ccg gct cga att
301     cag cct cca act caa gct cgc ggg aaa gac tac ctg aga gga gaa aag ctt ctg tcc ctg
361     gac ctt ctt ctg agg gtg gag tcg gag gct ccc tgc ttt cca gcc gcc cag tga ccc aag
421     ctt aat ctt cag cac cac ttg ggg cga cct ttc cgg tgc aaa cct acg att ctg ttt ctc
481     agg att cct ccc cat ccc gct tcg ccc cgg aaa agc tga caa gaa ctt cag gtg taa gcc
541     ctg agt agt gag gat ctg cgg tct ccg tgg aga gct gtg cct gga aga gaa gga cgc tgg
601     tgg ggg ctg aga tca gag ctg tct tct ggc cca gtt gcc ccc atg ctt ctg tca tgg cta
                                                        M   L   L   S   W   L
661     aca gtt cta ggg gct gga atg gtc gtc ctg cac ttc ttg cag aaa ctc ctg ttc cct tac
        T   V   L   G   A   G   M   V   V   L   H   F   L   Q   K   L   L   F   P   Y
721     ttt tgg gat gac ttc tgg ttc gtg ttg aag gtg gtg ctc att ata att cgg ctg aag aag
        F   W   D   D   F   W   F   V   L   K   V   V   L   I   I   I   R   L   K   K
781     tat gaa aag aga ggg gag ctg gtg act gtg ctg gat aaa ttc ttg agt cat gcc aaa aga
        Y   E   K   R   G   E   L   V   T   V   L   D   K   F   L   S   H   A   K   R
841     caa cct cgg aaa cct ttc atc atc tat gag gga gac atc tac acc tat cag gat gta gac
        Q   P   R   K   P   F   I   I   Y   E   G   D   I   Y   T   Y   Q   D   V   D
901     aaa agg agc agc aga gtg gcc cat gtc ttc ctg aac cat tcc tct ctg aaa aag ggg gac
        K   R   S   S   R   V   A   H   V   F   L   N   H   S   S   L   K   K   G   D
961     acg gtg gct ctg ctg atg agc aat gag ccg gac ttc gtt cac gtg tgg ttc ggc ctc gcc
        T   V   A   L   L   M   S   N   E   P   D   F   V   H   V   W   F   G   L   A
1021    aag ctg ggc tgc gtg gtg gcc ttt ctc aac acc aac att cgc tcc aac tcc ctc ctg aat
        K   L   G   C   V   V   A   F   L   N   T   N   I   R   S   N   S   L   L   N
1081    tgc atc cgc gcc tgt ggg ccc aga gcc cta gtg gtg ggc gca gat ttg ctt gga acg gta
        C   I   R   A   C   G   P   R   A   L   V   V   G   A   D   L   L   G   T   V
1141    gaa gaa atc ctt cca agc ctc tca gaa aat atc agt gtt tgg ggg atg aaa gat tct gtt
        E   E   I   L   P   S   L   S   E   N   I   S   V   W   G   M   K   D   S   V
1201    cca caa ggt gta att tca ctc aaa gaa aaa ctg agc acc tca cct gat gag ccc gtg cca
        P   Q   G   V   I   S   L   K   E   K   L   S   T   S   P   D   E   P   V   P
1261    cgc agc cac cat gtt gtc tca ctc ctc aag tct act tgt ctt tac att ttt acc tct gga
        R   S   H   H   V   V   S   L   L   K   S   T   C   L   Y   I   F   T   S   G
1321    aca aca ggt cta cca aaa gca gct gtg att agt cag ctg cag gtt tta agg ggt tct gct
        T   T   G   L   P   K   A   A   V   I   S   Q   L   Q   V   L   R   G   S   A
1381    gtc ctg tgg gct ttt ggt tgt act gct cat gac att gtt tat ata acc ctt cct ctg tat
        V   L   W   A   F   G   C   T   A   H   D   I   V   Y   I   T   L   P   L   Y
1441    cat agt tca gca gct atc ctg gga att tct gga tgt gtt gag ttg ggt gcc act tgt gtg
        H   S   S   A   A   I   L   G   I   S   G   C   V   E   L   G   A   T   C   V
1501    tta aag aag aaa ttt tca gca agc cag ttt tgg agt gac tgc aag aag tat gat gtg act
        L   K   K   K   F   S   A   S   Q   F   W   S   D   C   K   K   Y   D   V   T
1561    gtg ttt cag tat att gga gaa ctt tgt cgc tac ctt tgc aaa caa tct aag aga gaa gga
        V   F   Q   Y   I   G   E   L   C   R   Y   L   C   K   Q   S   K   R   E   G
1621    gaa aag gat cat aag gtg cgt ttg gca att gga aat ggc ata cgg agt gat gta tgg aga
        E   K   D   H   K   V   R   L   A   I   G   N   G   I   R   S   D   V   W   R
1681    gaa ttt tta gac aga ttt gga aat ata aag gtg tgt gaa ctt tat gca gct acc gaa tca
        E   F   L   D   R   F   G   N   I   K   V   C   E   L   Y   A   A   T   E   S
1741    agc ata tct ttc atg aac tac act ggg aga att gga gca att ggg aga aca aat ttg ttt
        S   I   S   F   M   N   Y   T   G   R   I   G   A   I   G   R   T   N   L   F
1801    tac aaa ctt ctt tcc act ttt gac tta ata aag tat gac ttt cag aaa gat gaa ccc atg
        Y   K   L   L   S   T   F   D   L   I   K   Y   D   F   Q   K   D   E   P   M
1861    aga aat gag cag ggt tgg tgt att cac gtg aaa aaa gga gaa cct gga ctt ctc att tct
        R   N   E   Q   G   W   C   I   H   V   K   K   G   E   P   G   L   L   I   S
1921    cga gtg aat gca aaa aat ccc ttc ttt ggc tat gct ggg cct tat aag cac aca aaa gac
        R   V   N   A   K   N   P   F   F   G   Y   A   G   P   Y   K   H   T   K   D
1981    aaa ttg ctt tgt gat gtt ttt aag aag gga gat gtt tac ctt aat act gga gac tta ata
        K   L   L   C   D   V   F   K   K   G   D   V   Y   L   N   T   G   D   L   I
2041    gtc cag gat cag gac aat ttc ctt tat ttt tgg gac cgt act gga gac act ttc aga tgg
        V   Q   D   Q   D   N   F   L   Y   F   W   D   R   T   G   D   T   F   R   W
2101    aaa gga gaa aat gtc gca acc act gag gtt gct gat gtt att gga atg ttg gat ttc ata
        K   G   E   N   V   A   T   T   E   V   A   D   V   I   G   M   L   D   F   I
2161    cag gaa gca aac gtc tat ggt gtg gct ata tca ggt tat gaa gga aga gca gga atg gct
        Q   E   A   N   V   Y   G   V   A   I   S   G   Y   E   G   R   A   G   M   A
2221    tct att att tta aaa cca aat aca tct tta gat ttg gaa aaa gtt tat gaa caa gtt gta
        S   I   I   L   K   P   N   T   S   L   D   L   E   K   V   Y   E   Q   V   V
2281    aca ttt cta cca gct tat gct tgt cca cga ttt tta aga att cag gaa aaa atg gaa gca
        T   F   L   P   A   Y   A   C   P   R   F   L   R   I   Q   E   K   M   E   A
2341    aca gga aca ttc aaa cta ttg aag cat cag ttg gtg gaa gat gga ttt aat cca ctg aaa
        T   G   T   F   K   L   L   K   H   Q   L   V   E   D   G   F   N   P   L   K
2401    att tct gaa cca ctt tac ttc atg gat aac ttg aaa aag tct tat gtt cta ctg acc agg
        I   S   E   P   L   Y   F   M   D   N   L   K   K   S   Y   V   L   L   T   R
2461    gaa ctt tat gat caa ata atg tta ggg gaa ata aaa ctt taa gat ttt tat atc tag aac
        E   L   Y   D   Q   I   M   L   G   E   I   K   L   *
2521    ttt cat atg ctt tct tag gaa gag tga gag ggg ggt ata tga ttc ttt atg aaa tgg gga
2581    aag gga gct aac att aat tat gca tgt act ata ttt cct taa tat gag aga taa ttt ttt
2641    aat tgc ata aga att tta att tct ttt aat tga tat aaa cat tag ttg att att ctt ttt
2701    atc tac ttg gag att cag tgc ata act aag tat ttt cct taa tac taa aga ttt taa ata
2761    ata aat agt ggc tag cgg ttt gga caa tca cta aaa atg tac ttt cta ata agt aaa att
2821    tct aat ttt gaa taa aag att aaa ttt tac tga aaa aaa aaa aaa aaa aaa aaa ttg gcg
2881    gcc gc
```

Figure 34

Protein sequence 619 a.a. MLLSWLTVLGAG ... LYDQIMLGEIKL

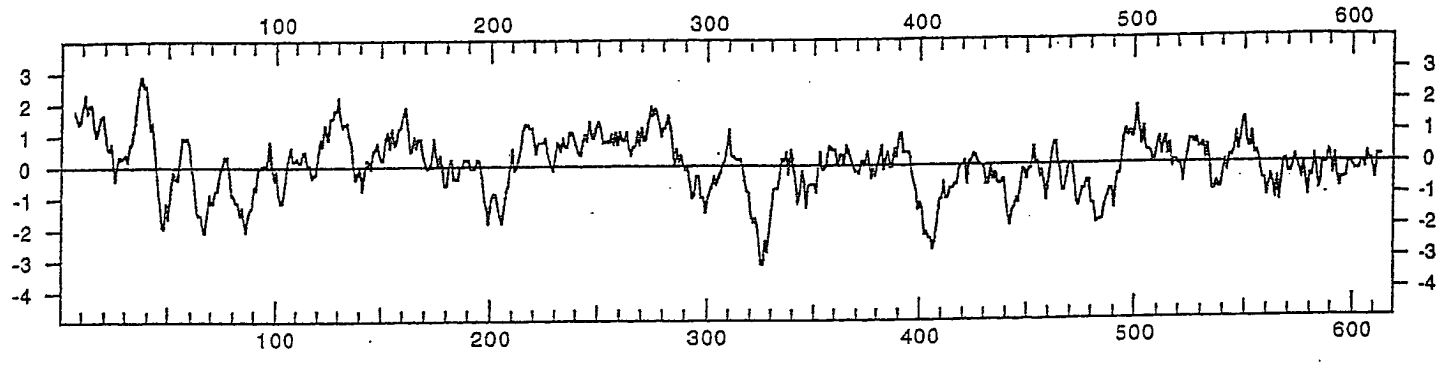


FIGURE 35 A

Protein sequence 619 a.a. MLLSWLTVLGAG ... LYDQIMLGEIKL

619 Amino Acids MW : 70066 Dalton

		n	n(%)	MW	MW(%)
A ala	alanine	33	5.3	2344	3.3
C cys	cysteine	14	2.3	1442	2.1
D asp	aspartic acid	34	5.5	3910	5.6
E glu	glutamic acid	31	5.0	4000	5.7
F phe	phenylalanine	34	5.5	5000	7.1
G gly	glycine	44	7.1	2508	3.6
H his	histidine	13	2.1	1781	2.5
I ile	isoleucine	37	6.0	4184	6.0
K lys	lysine	48	7.8	6148	8.8
L leu	leucine	75	12.1	8481	12.1
M met	methionine	11	1.8	1441	2.1
N asn	asparagine	21	3.4	2394	3.4
P pro	proline	21	3.4	2038	2.9
Q gln	glutamine	18	2.9	2305	3.3
R arg	arginine	27	4.4	4214	6.0
S ser	serine	40	6.5	3481	5.0
T thr	threonine	30	4.8	3031	4.3
V val	valine	51	8.2	5052	7.2
W trp	tryptophan	11	1.8	2046	2.9
X ukw	unknown	-	-		
Y tyr	tyrosine	26	4.2	4239	6.1
Z ---	STOP	-	-		

FIGURE 35 B

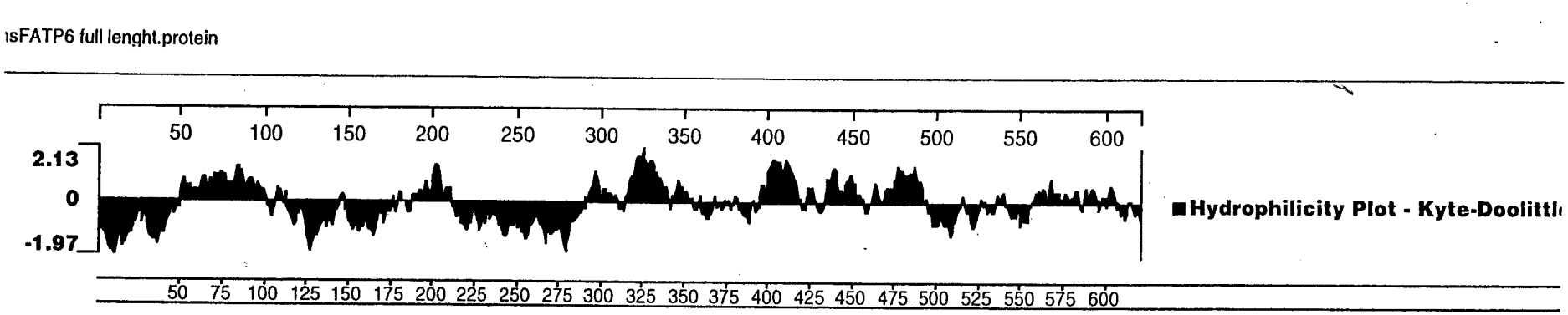
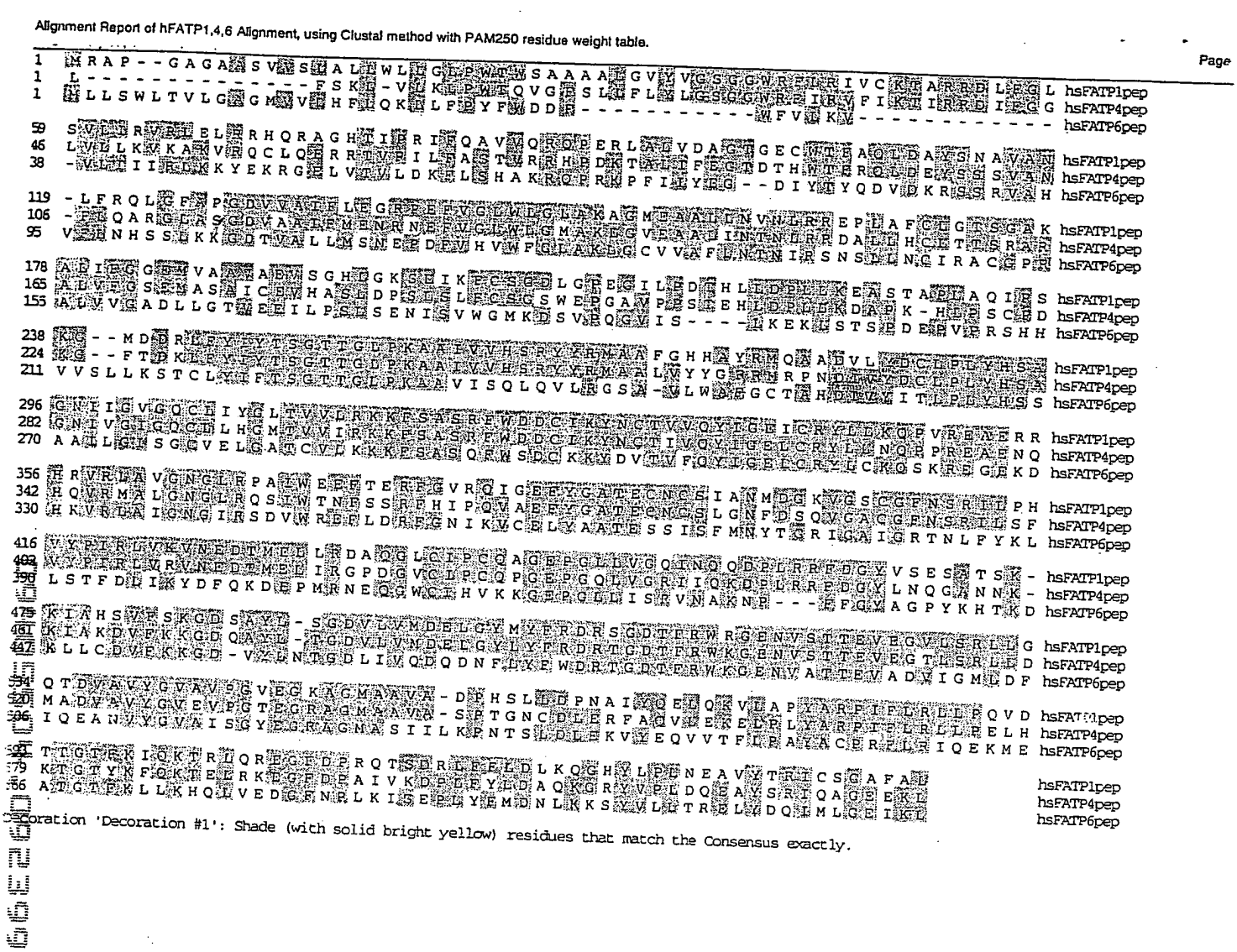

isFATP6 full lenght.protein
50 100 150 200 250 300 350 400 450 500 550 600
2.13
0
-1.97
Hydrophilicity Plot - Kyte-Doolittl
50 75 100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600

Figure 35C



Decoration 'Decoration #1': Shade (with solid bright yellow) residues that match the Consensus exactly.

Fisure 36

66260-705504.60

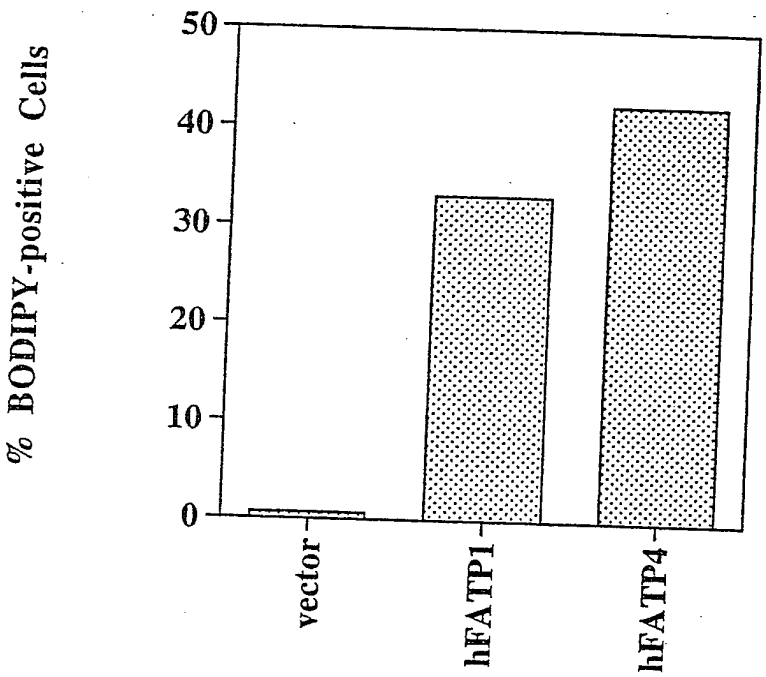
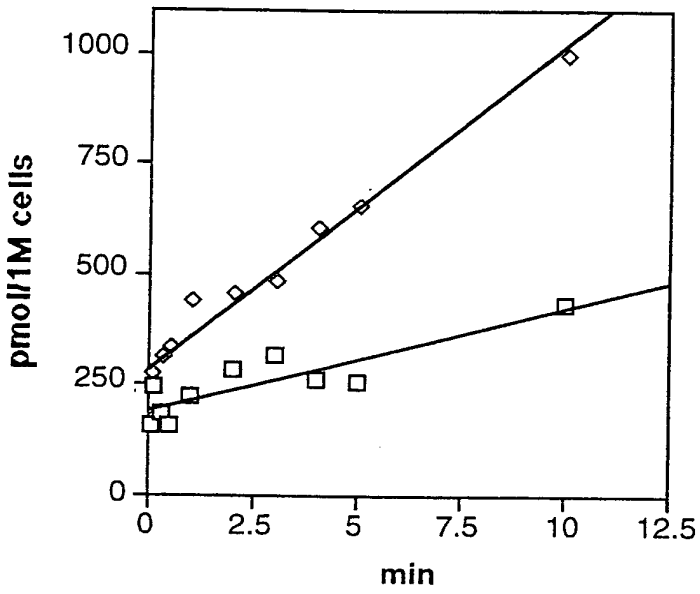


Figure 37

65250-4055040



□ 293 vector control: 23 pmol/(min*1*10^6 cells)

◇ 293 FATP4 clone 7: 73 pmol/(min*1*10^6 cells)

Fig. 38

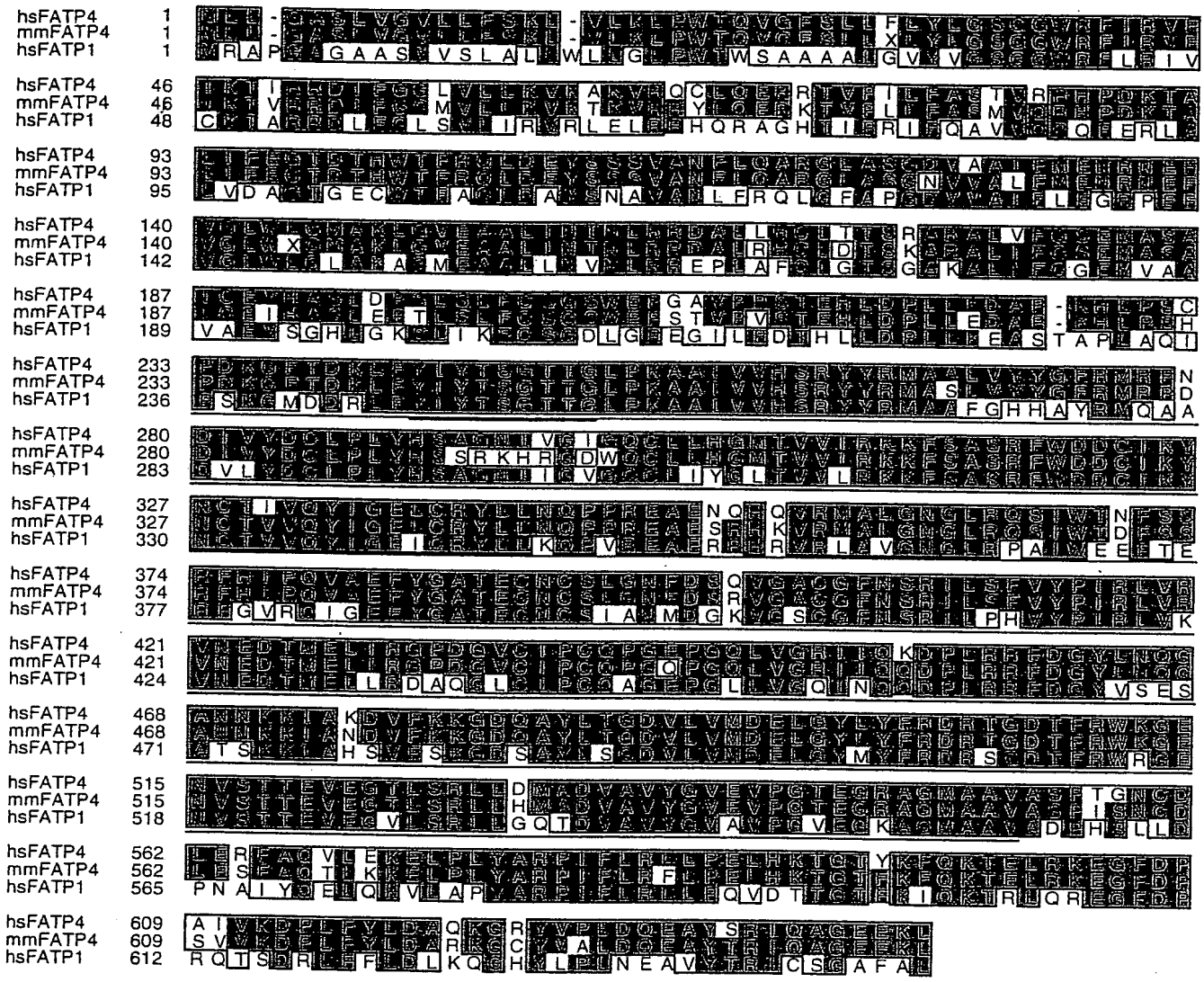
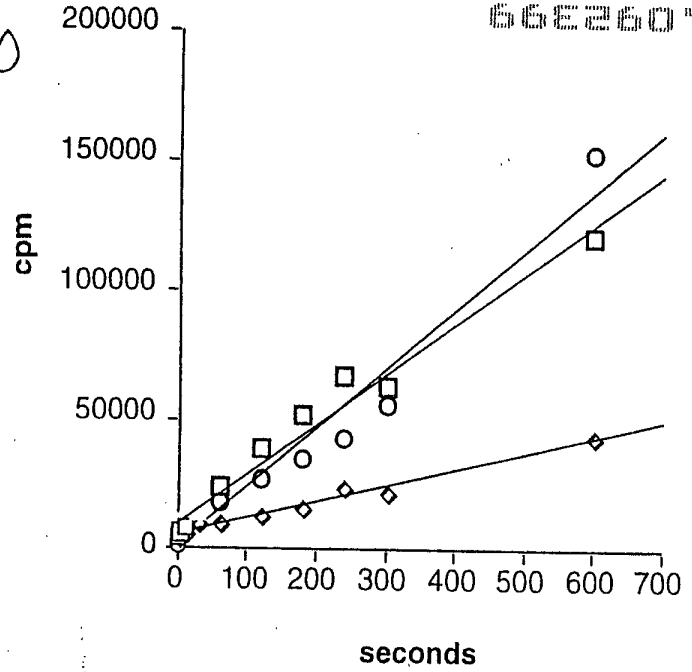


Fig. 39

5,935,804

Fig. 40



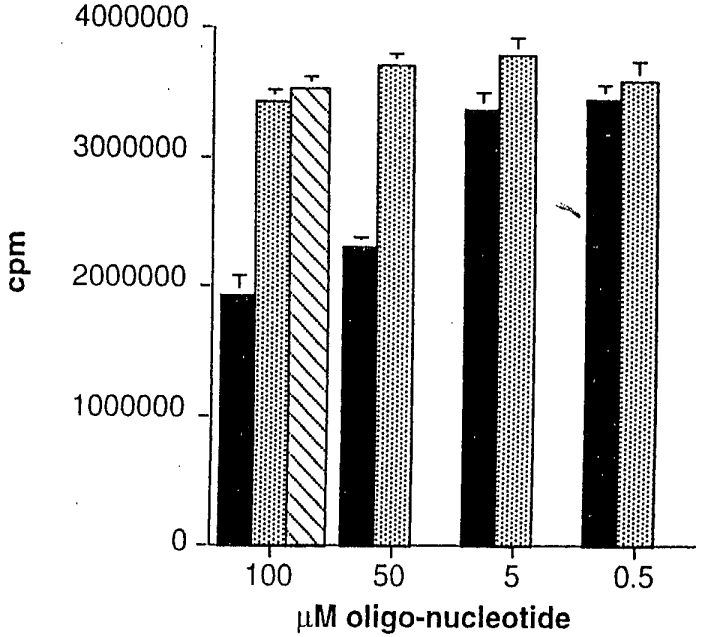
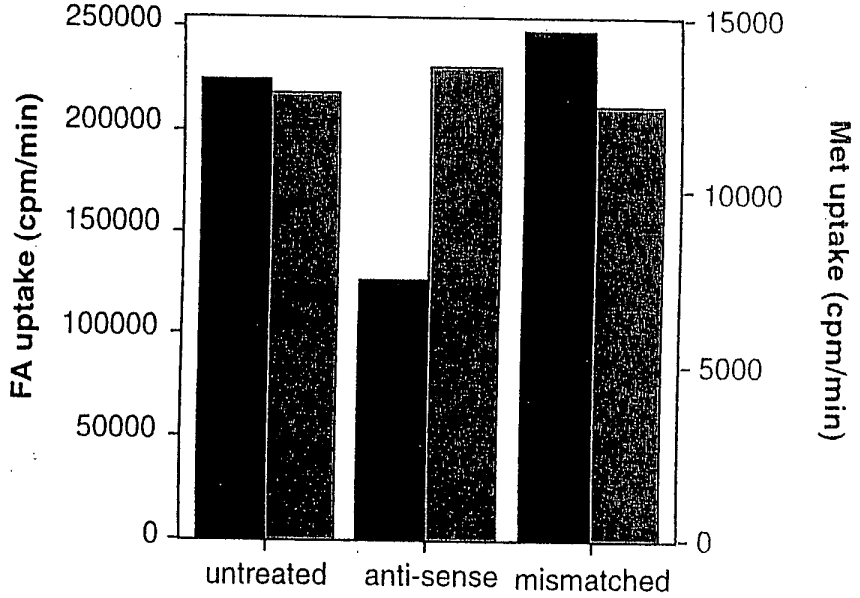


Fig. 41

Fig. 42



mmFATP4 DNA sequence

ATGCTGCTTGGAGCCTCTCTGGTGGGGGCGCTACTGTTCTCCAAGCTAGTGCTGAAGCTGCCCTGGACCCAGGTGGGATT
CTCCCTGTTGCTCCTGTACTTGGGGTCTGGTGGCTGGCGTTTCATCCGGGTCTTCATCAAGACGGTCAGGAGAGATATCT
TTGGTGGCATGGTGCTCCTGAAGGTGAAGACCAAGGTGCGACGGTACCTTCAGGAGCGGAAGACGGTGCCCCTGCTGTTT
GCTTCAATGGTACAGCGCCACCCGGACAAGACAGCCCTGATTTTCGAGGGCACAGACACTCACTGGACCTTCCGCCAGCT
GGATGAGTACTCCAGTAGTGTGGCCAACTTCCTGCAGGCCCGGGGCCTGGCCTCAGGCAATGTAGTTGCCCTCTTTATGG
AAAACCGCAATGAGTTTGTGGGTCTGTGGCTAGGCATGGCCAAGCTGGGCGTGGAGGCGGCTCTCATCAACACCAACCTT
AGGCGGGATGCCCTGCGCCACTGTCTTGACACCTCAAAGGCACGAGCTCTCATCTTTGGCAGTGAGATGGCCTCAGCTAT
CTGTGAGATCCATGCTAGCCTGGAGCCCACACTCAGCCTCTTCTGCTCTGGATCCTGGGAGCCCAGCACAGTGCCCGTCA
GCACAGAGCATCTGGACCCTCTTCTGGAAGATGCCCCGAAGCACCTGCCCAGTCACCCAGACAAGGGTTTTACAGATAAG
CTCTTCTACATCTACACATCGGGCACCACGGGGCTACCCAAAGCTGCCATTGTGGTGCACAGCAGGTATTATCGTATGGC
TTCCCTGGTGTACTATGGATTCCGCATGCGGCCTGATGACATTGTCTATGACTGCCTCCCCCTCTACCACTCAAGCAGGA
AACATCGTGGGGATTGGCAGTGCTTACTCCACGGCATGACTGTGGTGATCCGGAAGAAGTTCTCAGCCTCCCGGTTCTGG
GATGATTGTATCAAGTACAACTGCACAGTGGTACAGTACATTGGCGAGCTCTGCCGCTACCTCCTGAACCAGCCACCCCG
TGAGGCTGAGTCTCGGCACAAGGTGCGCATGGCACTGGGCAACGGTCTCCGGCAGTCCATCTGGACCGACTTCTCCAGCC
GTTTCCACATCCCCCAGGTGGCTGAGTTCTATGGGGCCACTGAATGCAACTGTAGCCTGGGCAACTTTGACAGCCGGGTG
GGGGCCTGTGGCTTCAATAGCCGCATCCTGTCCTTTGTGTACCCTATCCGTTTGGTACGTGTCAATGAGGATACCATGGA
ACTGATCCGGGGACCCGATGGAGTCTGCATTCCCTGTCAACCAGGTCAGCCAGGCCAGCTGGTGGGTCGCATCATCCAGC
AGGACCCTCTGCGCCGTTTCGACGGGTACCTCAACCAGGGTGCCAACAACAAGAAGATTGCTAATGATGTCTTCAAGAAG
GGGGACCAAGCCTACCTCACTGGTGACGTCCTGGTGATGGATGAGCTGGGTTACCTGTACTTCCGAGATCGCACTGGGGA
CACGTTCCGCTGGAAAGGGGAGAATGTATCTACCACTGAGGTGGAGGGCACACTCAGCCGCCTGCTTCATATGGCAGATG
TGGCAGTTTATGGTGTTGAGGTGCCAGGAACTGAAGGCCGAGCAGGAATGGCTGCCGTTGCAAGTCCCATCAGCAACTGT
GACCTGGAGAGCTTTGCACAGACCTTGAAAAAGGAGCTGCCTCTGTATGCCCGCCCCATCTTCCTGCGCTTCTTGCCTGA
GCTGCACAAGACAGGGACCTTCAAGTTCCAGAAGACAGAGTTGCGGAAGGAGGGCTTTGACCCATCTGTTGTGAAAGACC
CGCTGTTCTATCTGGATGCTCGGAAGGGCTGCTACGTTGCACTGGACCAGGAGGCCTATACCCGCATCCAGGCAGGCGAG
GAGAAGCTGTGATTTCCCCCTACATCCCTCTGAGGGCCAGAAGATGCTGGATTCAGAGCCCTAGCGTCCACCCCAGAGGG
TCCTGGGCAATGCCAGACCAAAGCTAGCAGGGCCCGCACCTCCGCCCCTAGGTGCTGATCTCCCCTCTCCCAAACTGCCA
AGTGACTCACTGCCGCTTCCCCGACCCTCCAGAGGCTTTCTGTGAAAGTCTCATCCAAGCTGTGTCTTCTGGTCCAGGCG
TGGCCCCTGGCCCCAGGGTTTCTGATAGGCTCCTTTAGGATGGTATCTTGGGTCCAGCGGGCCAGGGTGTGGGAGAGGAG
TCACTAAGATCCCTCCAATCAGAAGGGAGCTTACAAAGGAACCAAGGCAAAGCCTGTAGACTCAGGAAGCTAAGTGGCCA
GAGACTATAGTGGCCAGTCATCCCATGTCCACAGAGGATCTTGGTCCAGAGCTGCCAAAGTGTCACCTCTCCCTGCCTGC

ACCTCTGGGGAAAAGAGGACAGCATGTGGCCACTGGGCACCTGTCTCAAGAAGTCAGGATCACACACTCAGTCCTTGTTT
CTCCAGGTTCCCTTGTTCTTGTCTCGGGGAGGGAGGGACGAGTGTCCTGTCTGTCCTTCCTGCCTGTCTGTGAGTCTGTG
TTGCTTCTCCATCTGTCCTAGCCTGAGTGTGGGTGGAACAGGCATGAGGAGAGTGTGGCTCAGGGGCCAATAAACTCTGC
CTTGACTCCTCTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 43A

mmFATP4 protein sequence

MLLGASLVGALLFSKLVLKLPWTQVGFSLLLLYLGSGGWRFIRVFIKTVRRDIFGGMVLLKVKTKVRRYLQERKTVPLLF
ASMVQRHPDKTALIFEGTDTHWTFRQLDEYSSSVANFLQARGLASGNVVALFMENRNEFVGLWLGMAKLGVEAALINTNL
RRDALRHCLDTSKARALIFGSEMASAICEIHASLEPTLSLFCSGSWEPSTVPVSTEHLDPLLEDAPKHLPSHPDKGFTDK
LFYIYTSGTTGLPKAAIVVHSRYYRMASLVYYGFRMRPDDIVYDCLPLYHSSRKHRGDWQCLLHGMTVVIRKKFSASRFW
DDCIKYNCTVVQYIGELCRYLLNQPPREAESRHKVRMALGNGLRQSIWTDFSSRFHIPQVAEFYGATECNCSLGNFDSRV
GACGFNSRILSFVYPIRLVRVNEDTMELIRGPDGVCIPCQPGQPGQLVGRIIQQDPLRRFDGYLNQGANNKKIANDVFKK
GDQAYLTGDVLVMDELGYLYFRDRTGDTFRWKGENVSTTEVEGTLSRLLHMADVAVYGVEVPGTEGRAGMAAVASPISNC
DLESFAQTLKKELPLYARPIFLRFLPELHKTGTFKFQKTELRKEGFDPSVVKDPLFYLDARKGCYVALDQEAYTRIQAGE
EKL

Figure 43B

hsFATP1 full lenght.DNA

```
         10         20         30         40
TCGACCCACGGCGTCCGGGACCCCAAAGCAGAAGCCCGCA 40
CAGTAGGCACAGCGCACCCAAGAAGGGTCCAGGAGTCTGC 80
AGAAACAGAAAGGTCCCCGGCCTCAGCCTCCTAGTCCCTG 120
CCTGCCTCCTGCCTGAGCTTCTGGGAGACTGAAGGCACGG 160
CTTGCAGCTTCAGGATGCGGGCTCCGGGTGCGGGCGCGGC 200
        210        220        230        240
CTCGGTGGTCTCGCTGGCGCTGTTGTGGCTGCTGGGGCTG 240
CCGTGGACCTGGAGCGCGGCAGCGGCGCTCGGCGTGTACG 280
TGGGCAGCGGCGGCTGGCGCTTCCTGCGCATCGTCTGCAA 320
GACCGCGAGGCGAGACCTCTTCGGTCTCTCTGTGCTGATC 360
CGCGTGCGCCTGGAGCTGCGGCGGCACCAGCGTGCCGGCC 400
        410        420        430        440
ACACCATCCCGCGCATCTTTCAGGCGGTAGTGCAGCGACA 440
GCCCGAGCGCCTGGCGCTGGTGGATGCCGGGACCGGCGAG 480
TGCTGGACCTTTGCGCAGCTGGACGCCTACTCCAATGCGG 520
TAGCCAACCTCTTCCGCCAGCTGGGCTTCGCGCCGGGCGA 560
CGTGGTGGCCATCTTCCTGGAGGGCCGGCCGGAGTTCGTG 600
        610        620        630        640
GGGCTGTGGCTGGGCCTGGCCAAGGCGGGCATGGAGGCCG 640
CGCTGCTCAACGTGAACCTGCGGCGCGAGCCCCTGGCCTT 680
CTGCCTGGGCACCTCGGGCGCTAAGGCCCTGATCTTTGGA 720
GGAGAAATGGTGGCGGCGGTGGCCGAAGTGAGCGGGCATC 760
TGGGGAAAAGTTTGATCAAGTTCTGCTCTGGAGACTTGGG 800
        810        820        830        840
GCCCGAGGGCATCTTGCCGGACACCCACCTCCTGGACCCG 840
CTGCTGAAGGAGGCCTCTACTGCCCCCTTGGCACAGATCC 880
CCAGCAAGGGCATGGACGATCGTCTTTTCTACATCTACAC 920
GTCGGGGACCACCGGGCTGCCCAAGGCTGCCATTGTCGTG 960
CACAGCAGGTACTACCGCATGGCAGCCTTCGGCCACCACG 1000
        1010       1020       1030       1040
CCTACCGCATGCAGGCGGCTGACGTGCTCTATGACTGCCT 1040
GCCCCTGTACCACTCGGCAGGAAACATCATCGGCGTGGGG 1080
CAGTGTCTCATCTATGGGCTGACAGTCGTCCTCCGCAAGA 1120
AATTCTCGGCCAGCCGCTTCTGGGACGACTGCATCAAGTA 1160
CAACTGCACGGTGGTTCAGTACATCGGGGAGATCTGCCGC 1200
```

Fig. 44A

09405504-030396

```
        1210        1220        1230        1240
TACCTGCTGAAGCAGCCGGTGCGCGAGGCGGAGAGGCGAC 1240
ACCGCGTGCGCCTGGCGGTGGGGAACGGGCTGCGTCCTGC 1280
CATCTGGGAGGAGTTCACGGAGCGCTTCGGCGTACGCCAA 1320
ATCGGGGAGTTCTACGGCGCCACCGAGTGCAACTGCAGCA 1360
TTGCCAACATGGACGGCAAGGTCGGCTCCTGTGGTTTCAA 1400
        1410        1420        1430        1440
CAGCCGCATCCTGCCCCACGTGTACCCCATCCGGCTGGTG 1440
AAGGTCAATGAGGACACAATGGAGCTGCTGCGGGATGCCC 1480
AGGGCCTCTGCATCCCCTGCCAGGCCGGGGAGCCTGGCCT 1520
CCTTGTGGGTCAGATCAACCAACAGGACCCGCTGCGCCGC 1560
TTCGATGGCTATGTCAGCGAGAGCGCCACCAGCAAGAAGA 1600
        1610        1620        1630        1640
TCGCCCACAGCGTCTTCAGCAAGGGCGACAGCGCCTACCT 1640
CTCAGGTGACGTGCTAGTGATGGATGAGCTGGGCTACATG 1680
TACTTCCGGGACCGTAGCGGGGACACCTTCCGCTGGCGAG 1720
GGGAGAACGTCTCCACCACCGAGGTGGAGGGCGTGCTGAG 1760
CCGCCTGCTGGGCCAGACAGACGTGGCCGTCTATGGGGTG 1800
        1810        1820        1830        1840
GCTGTTCCAGGAGTGGAGGGTAAGGCAGGGATGGCGGCCG 1840
TCGCAGACCCCCACAGCCTGCTGGACCCCAACGCGATATA 1880
CCAGGAGCTGCAGAAGGTGCTGGCACCCTATGCCCGGCCC 1920
ATCTTCCTGCGCCTCCTGCCCCAGGTGGACACCACAGGCA 1960
CCTTCAAGATCCAGAAGACGAGGCTGCAGCGAGAGGGCTT 2000
        2010        2020        2030        2040
TGACCCACGCCAGACCTCAGACCGGCTCTTCTTCCTGGAC 2040
CTGAAGCAGGGCCACTACCTGCCCTTAAATGAGGCAGTCT 2080
ACACTCGCATCTGCTCGGGCGCCTTCGCCCTCTGAAGCTG 2120
TTCCTCTACTGGCCACAAACTCTGGGCCTGGTGGGAGAGG 2160
CCAGCTTGAGCCAGACAGCGCTGCCCAGGGGTGGCCGCCT 2200
        2210        2220        2230        2240
AGTACACACCCACCTGGCCGAGCTGTACCTGGCACGGCCC 2240
ATCCTGGACTGAGAAACTGGAACCTCAGAGGAACCCGTGC 2280
CTCTCTGCTGCCTTGGTGCCCCTGTGTCTGCCTCCTCTCC 2320
CTGCTTTTCAGCCTCTGTCTCCTTCCATCCCTGTCCCTGT 2360
CTGGCCTTAACTCTTCCCTCTCTTTCTTTTCTTTCTTTCT 2400
        2410        2420        2430        2440
TTCTTTTTTTTTAAGATAGAGTCTCACTCTGCTGCCCGGG 2440
CTAGAGTGCAGTGGTGGGATCTCGGCTCACTGCAACCTCT 2480
GCCTCCTGGGGTTCAAGTGATCCTCCCACCTCAGCCTCCT 2520
GAGTAGCTGGGATTACAGGCACCCGCCACCACGTCCAGCT 2560
AATTTTTATATTTTTAGTAGAGACGGGGTTTCACCATGTT 2600
```

Fig. 44B

5,952,480 Sep. 14, 1999

hsFATP1 full lenght.DNA

```
        2610        2620        2630        2640
GGTCAGGCTGGTCTTGAACTCCTGACCTCAGGTGATCCGC 2640
TGGCCTCGGCCTCCCAGAGTGCTGGGATTATAGGCGTGAG 2680
CCTCTGGCCCGGCCTTTCCTTTTTCCTCTCCTCTCCTGCC 2720
GAGAGTGGAACACACGTGTCCTGGGAGCTGCATCTTGTGT 2760
AGGGTCCAGCTGCTTTTGGGGACTGCAGGAATCATCTCCC 2800
        2810        2820        2830        2840
CTGGGCCCTGGACTCGGACTGGGGCCTCCCCACCTCCCTC 2840
TCGGCTGTGCCTTACGGAGCCCCAATCCAGGCCTCCTGTG 2880
GCTGTTGGGTTCCAGATGCTGCAGCTCCATGTGACTTCCA 2920
AGCAGGCCCTCCGCCCTCCCTGCTGAATGGAGGAGCCGGG 2960
GGTCCCCCAGGCCAACTGGAAAATCTCCCAGGCTAGGCCA 3000
        3010        3020        3030        3040
ATTGCCTTTTGCACTTCCCCGTTCCTGTCACATTTCCCCA 3040
GCCCCACCTTCCCCTCCTGATGCCCTGAAAGCTTCCGGAA 3080
TTGACTGTGACCACTTGGATGTCACCACTGTCAGCCCCTG 3120
CCTTGATGTCCCCATTTAGCCATCTCCATGGAGCTCCTGC 3160
TGGAGGGCCCTGAACCCTGCACTGCGTGGCTGCCCAGCCA 3200
        3210        3220        3230        3240
GCTGCCTCCTGTCCTGGGAGGAGGCCTCCTGGGTGTCCTC 3240
ATCTGGTGTGTCTACTGGAGGGTCCCACAGGAGAGGCAGC 3280
AGAGGGGTCAGGGGAGGTCTCCTGCCGGGGGTTGGCCTCT 3320
CAAGCCTCAGGGGTTCTAGCCTGTTGAATATACCCCACCT 3360
GGTGGGTGGCCCCTCCGATGTCCCCACTGATGGCTCTGAC 3400
        3410        3420        3430        3440
ACCGTGTTGGTGGCGATGTCCCAGACAATCCCACCAGGAC 3440
GGCCCAGACATCCCTACTGGCTTCGCTGGTGGCTCATCTC 3480
GAACATCCACGCCAGCCTTTCTGGGGCCGGCCACCCAGGC 3520
CGCCTGTCCGTCTGTCCTCCCTCCAGCAGCACCCCCTGGC 3560
CCCTGGAGTGGTGGGGCCATGGCAAGAGACACCGTGGCGT 3600
        3610        3620        3630        3640
CTCATGTGAACTTTCCTGGGCACTGTGGTTTTATTTCCTA 3640
ATTGATTTAAGAAATAAACCTGAAGACCGTCTGGTGAAAA 3680
AAAAAAAAAAAAAA 3694
```

Fig. 44C

66250 "+05504660

hsFATP1 full lenght.protein

```
         10        20        30        40
MRAPGAGAASVVSLALLWLLGLPWTWSAAAALGVYVGSGG 40
WRFLRIVCKTARRDLFGLSVLIRVRLELRRHQRAGHTIPR 80
IFQAVVQRQPERLALVDAGTGECWTFAQLDAYSNAVANLF 120
RQLGFAPGDVVAIFLEGRPEFVGLWLGLAKAGMEAALLNV 160
NLRREPLAFCLGTSGAKALIFGGEMVAAVAEVSGHLGKSL 200
         210       220       230       240
IKFCSGDLGPEGILPDTHLLDPLLKEASTAPLAQIPSKGM 240
DDRLFYIYTSGTTGLPKAAIVVHSRYYRMAAFGHHAYRMQ 280
AADVLYDCLPLYHSAGNIIGVGQCLIYGLTVVLRKKFSAS 320
RFWDDCIKYNCTVVQYIGEICRYLLKQPVREAERRHRVRL 360
AVGNGLRPAIWEEFTERFGVRQIGEFYGATECNCSIANMD 400
         410       420       430       440
GKVGSCGFNSRILPHVYPIRLVKVNEDTMELLRDAQGLCI 440
PCQAGEPGLLVGQINQQDPLRRFDGYVSESATSKKIAHSV 480
FSKGDSAYLSGDVLVMDELGYMYFRDRSGDTFRWRGENVS 520
TTEVEGVLSRLLGQTDVAVYGVAVPGVEGKAGMAAVADPH 560
SLLDPNAIYQELQKVLAPYARPIFLRLLPQVDTTGTFKIQ 600
         610       620       630       640
KTRLQREGFDPRQTSDRLFFLDLKQGHYLPLNEAVYTRIC 640
SGAFAL. 647
```

Fig. 45

hsVLACS full lenght.DNA

10 20 30 40

GGAATTCCAAAAAAAAAAAATACGACTACACCTGCTCCGG 40
AGCCCGCGGCGGTACCTGCAGCGGAGGAGCTCTGTCTTCC 80
CCTTCATCTCACGCGAGCCCGGCGTCCCGCCGCGTGCGCC 120
CCGGCGCAGCCCGCCAGTCCGCCCGGAGCCCGCCCAGTCG 160
CCGCGCTGCACGCCCGGGGTGAACCCTCTGCCCTCGCTGG 200

210 220 230 240

GACAGAGGGCCCCGCAGCCGTCATGCTTTCCGCCATCTAC 240
ACAGTCCTGGCGGGACTGCTGTTCCTGCCGCTCCTGGTGA 280
ACCTCTGCTGCCCATACTTCTTCCAGGACATAGGCTACTT 320
CTTGAAGGTGGCCGCCGTGGGCCGGAGGGTGCGCAGCTAC 360
GGGCAGCGGCGGCCGGCGCGCACCATCCTGCGGGCGTTCC 400

410 420 430 440

TGGAGAAAGCGCGCCAGACGCCACACAAGCCTTTTCTGCT 440
CTTCCGCGACGAGACTCTCACCTACGCGCAGGTGGACCGG 480
CGCAGCAATCAAGTGGCCCGGGCGCTGCACGACCACCTCG 520
GCCTGCGCCAGGGAGACTGCGTGGCGCTCCTTATGGGTAA 560
CGAGCCGGCCTACGTGTGGCTGTGGCTGGGGCTGGTGAAG 600

610 620 630 640

CTGGGCTGTGCCATGGCGTGCCTCAATTACAACATCCGCG 640
CGAAGTCCCTGCTGCACTGCTTCCAGTGCTGCGGGGCGAA 680
GGTGCTGCTGGTGTCGCCAGAACTACAAGCAGCTGTCGAA 720
GAGATACTGCCAAGCCTTAAAAAAGATGATGTGTCCATCT 760
ATTATGTGAGCAGAACTTCTAACACAGATGGGATTGACTC 800

810 820 830 840

TTTCCTGGACAAAGTGGATGAAGTATCAACTGAACCTATC 840
CCAGAGTCATGGAGGTCTGAAGTCACTTTTTCCACTCCTG 880
CCTTATACATTTATACTTCTGGAACCACAGGTCTTCCAAA 920
AGCAGCCATGATCACTCATCAGCGCATATGGTATGGAACT 960
GGCCTCACTTTTGTAAGCGGATTGAAGGCAGATGATGTCA 1000

1010 1020 1030 1040

TCTATATCACTCTGCCCTTTTACCACAGTGCTGCACTACT 1040
GATTGGCATTCACGGATGTATTGTGGCTGGTGCTACTCTT 1080
GCCTTGCGGACTAAATTTTCAGCCAGCCAGTTTTGGGATG 1120
ACTGCAGAAAATACAACGTCACTGTCATTCAGTATATCGG 1160
TGAACTGCTTCGGTATTTATGCAACTCACCACAGAAACCA 1200

Fig. 46A

hsVLACS full lenght.DNA

```
        1210        1220        1230        1240
AATGACCGTGATCATAAAGTGAGACTGGCACTGGGAAATG 1240
GCTTACGAGGAGATGTGTGGAGACAATTTGTCAAGAGATT 1280
TGGGGACATATGCATCTATGAGTTCTATGCTGCCACTGAA 1320
GGCAATATTGGATTTATGAATTATGCGAGAAAAGTTGGTG 1360
CTGTTGGAAGAGTAAACTACCTACAGAAAAAAATCATAAC 1400
        1410        1420        1430        1440
TTATGACCTGATTAAATATGATGTGGAGAAAGATGAACCT 1440
GTCCGAGATGAAAATGGATATTGCGTCAGAGTTCCCAAAG 1480
GTGAAGTTGGACTTCTGGTTTGCAAAATCACACAACTTAC 1520
ACCATTTAATGGCTATGCTGGAGCAAAGGCTCAGACAGAG 1560
AAGAAAAAACTGAGAGATGTCTTTAAGAAAGGAGACCTCT 1600
        1610        1620        1630        1640
ATTTCAACAGTGGAGATCTCTTAATGGTTGACCATGAAAA 1640
TTTCATCTATTTCCACGACAGAGTTGGAGATACATTCCGG 1680
TGGAAAGGGGAAAATGTGGCCACCACTGAAGTTGCTGATA 1720
CAGTTGGACTGGTTGATTTTGTCCAAGAAGTAAATGTTTA 1760
TGGAGTGCATGTGCCAGATCATGAGGGTCGCATTGGCATG 1800
        1810        1820        1830        1840
GCCTCCATCAAAATGAAAGAAAACCATGAATTTGATGGAA 1840
AGAAACTCTTTCAGCACATTGCTGATTACCTACCTAGTTA 1880
TGCAAGGCCCCGGTTTCTAAGAATACAGGACACCATTGAG 1920
ATCACTGGAACTTTTAAACACCGCAAAATGACCCTGGTGG 1960
AGGAGGGCTTTAACCCTGCTGTCATCAAAGATGCCTTGTA 2000
        2010        2020        2030        2040
TTTCTTGGATGACACAGCAAAAATGTATGTGCCTATGACT 2040
GAGGACATCTATAATGCCATAAGTGCTAAAACCCTGAAAC 2080
TCTGAATATTCCCAGGAGGATAACTCAACATTTCCAGAAA 2120
GAAACTGAATGGACAGCCACTTGATATAATCCAACTTTAA 2160
TTTGATTGAAGATTGTGAGGAAATTTTGTAGGAAATTTGC 2200
        2210        2220        2230        2240
ATACCCGTAAAGGGAGACTTTTTTAAATAACAGTTGAGTC 2240
TTTGCAAGTAAAAAGATTTAGAGATTATTATTTTTCAGTG 2280
TGCACCTACTGTTTGTATTTGCAAACTGAGCTTGTTGGAG 2320
GGAAGGCATTATTTTTTAAAATACTTAGTAAATTAAATGA 2360
AC 2362
```

Fig. 46B

hsVLACS full lenght.protein

```
                10        20        30        40
MLSAIYTVLAGLLFLPLLVNLCCPYFFQDIGYFLKVAAVG 40
RRVRSYGQRRPARTILRAFLEKARQTPHKPFLLFRDETLT 80
YAQVDRRSNQVARALHDHLGLRQGDCVALLMGNEPAYVWL 120
WLGLVKLGCAMACLNYNIRAKSLLHCFQCCGAKVLLVSPE 160
LQAAVEEILPSLKKDDVSIYYVSRTSNTDGIDSFLDKVDE 200
               210       220       230       240
VSTEPIPESWRSEVTFSTPALYIYTSGTTGLPKAAMITHQ 240
RIWYGTGLTFVSGLKADDVIYITLPFYHSAALLIGIHGCI 280
VAGATLALRTKFSASQFWDDCRKYNVTVIQYIGELLRYLC 320
NSPQKPNDRDHKVRLALGNGLRGDVWRQFVKRFGDICIYE 360
FYAATEGNIGFMNYARKVGAVGRVNYLQKKIITYDLIKYD 400
               410       420       430       440
VEKDEPVRDENGYCVRVPKGEVGLLVCKITQLTPFNGYAG 440
AKAQTEKKKLRDVFKKGDLYFNSGDLLMVDHENFIYFHDR 480
VGDTFRWKGENVATTEVADTVGLVDFVQEVNVYGVHVPDH 520
EGRIGMASIKMKENHEFDGKKLFQHIADYLPSYARPRFLR 560
IQDTIEITGTFKHRKMTLVEEGFNPAVIKDALYFLDDTAK 600
               610       620       630       640
MYVPMTEDIYNAISAKTLKL. 621
```

Fig. 47

```
        10        20        30        40
AAGTTCTCGGCTGGTCAGTTCTGGGAAGATTGCCAGCAGC 40
ACAGGGTGACGGTGTTCCAGTACATTGGGGAGCTGTGCCG 80
ATACCTTGTCAACCAGCCCCCGAGCAAGGCAGAACGTGGC 120
CATAAGGTCCGGCTGGCAGTGGGCAGCGGGCTGCGCCCAG 160
ATACCTGGGAGCGTTTTGTGCGGCGCTTCGGGCCCCTGCA 200
       210       220       230       240
GGTGCTGGAGACATATGGACTGACAGAGGGCAACGTGGCC 240
ACCATCAACTACACAGGACAGCGGGGCGCTGTGGGGCGTG 280
CTTCCTGGCTTTACAAGCATATCTTCCCCTTCTCCTTGAT 320
TCGCTATGATGTCACCACAGGAGAGCCAATTCGGGACCCC 360
CAGGGGCACTGTATGGCCACATCTCCAGGTGAGCCAGGGC 400
       410       420       430       440
TGCTGGTGGCCCCGGTAAGCCAGCAGTCCCCATTCCTGGG 440
CTATGCTGGCGGGCCAGAGCTGGCCCAGGGGAAGTTGCTA 480
AAGGATGTCTTCCGGCCTGGGGATGTTTTCTTCAACACTG 520
GGGACCTGCTGGTCTGCGATGACCAAGGTTTTCTCCGCTT 560
CCATGATCGTACTGGAGACACCTTCAGGTGGAAGGGGGAG 600
       610       620       630       640
AATGTGGCCACAACCGAGGTGGCAGAGGTCTTCGAGGCCC 640
TAGATTTTCTTCAGGAGGTGAACGTCTATGGAGTCACTGT 680
GCCAGGGCATGAAGGCAGGGCTGGAATGGCAGCCCTAGTT 720
CTGCGTCCCCCCCACGCTTTGGACCTTATGCAGCTCTACA 760
CCCACGTGTCTGAGAACTTGCCACCTTATGCCCGGCCCCG 800
       810       820       830       840
ATTCCTCAGGCTCCAGGAGTCTTTGGCCACCACAGAGACC 840
TTCAAACAGCAGAAAGTTCGGATGGCAAATGAGGGCTTCG 880
ACCCCAGCACCCTGTCTGACCCACTGTACGTTCTGGACCA 920
GGCTGTAGGTGCCTACCTGCCCCTCACAACTGCCCGGTAC 960
AGCGCCCTCCTGGCAGGAAACCTTCGAATCTGAGAACTTC 1000
      1010      1020      1030      1040
CACACCTGAGGCACCTGAGAGAGGAACTCTGTGGGGTGGG 1040
GGCCGTTGCAGGTGTACTGGGCTGTCAGGGATCTTTTCTA 1080
TACCAGAACTGCGGTCACTATTTTGTAATAAATGTGGCTG 1120
GAGCTGATCCAGCTGTCTCTGACAAAAAAAAAAAAAAAAA 1160
AAAGGGCGGCCGC 1173
```

Fig. 48

hsFATP3partial.protein

...

```
        10        20        30        40
KFSAGQFWEDCQQHRVTVFQYIGELCRYLVNQPPSKAERG 40
HKVRLAVGSGLRPDTWERFVRRFGPLQVLETYGLTEGNVA 80
TINYTGQRGAVGRASWLYKHIFPFSLIRYDVTTGEPIRDP 120
QGHCMATSPGEPGLLVAPVSQQSPFLGYAGGPELAQGKLL 160
KDVFRPGDVFFNTGDLLVCDDQGFLRFHDRTGDTFRWKGE 200
       210       220       230       240
NVATTEVAEVFEALDFLQEVNVYGVTVPGHEGRAGMAALV 240
LRPPHALDLMQLYTHVSENLPPYARPRFLRLQESLATTET 280
FKQQKVRMANEGFDPSTLSDPLYVLDQAVGAYLPLTTARY 320
SALLAGNLRI. 331
```

Fig. 49

09623999.040502

hsFATP4 full length

```
                1
          10        20        30        40
CGACCCACGCGTCCGGGCGGGCGGGGCCGGGCGGCGGGCG 40
GGGCTGGCGGGGCGGCCGGGCCATGCAGGGCGCAGAGCCG 80
GCTAAACCCTGCTGAGACCCGGCTCCGTGCGTCCAGGGGC 120
GGCTAATGCCCCTCACGCTGTCTACGCTGCTGCAACCGGG 160
CCGCATCTGGACGGGGCGCCGCGCGGCGGAGCCGACGCCG 200
        210       220       230       240
GGCCACAATGCTGCTTGGAGCCTCTCTGGTGGGGGTGCTG 240
CTGTTCTCCAAGCTGGTGCTGAAACTGCCCTGGACCCAGG 280
TGGGATTCTCCCTGTTGTTCCTCTACTTGGGATCTGGCGG 320
CTGGCGCTTCATCCGGGTCTTCATCAAGACCATCAGGCGC 360
GATATCTTTGGCGGCCTGGTCCTCCTGAAGGTGAAGGCAA 400
        410       420       430       440
AGGTGCGACAGTGCCTGCAGGAGCGGCGGACAGTGCCCAT 440
TTTGTTTGCCTCTACCGTTCGGCGCCACCCCGACAAGACG 480
GCCCTGATCTTCGAGGGCACAGATACCCACTGGACCTTCC 520
GCCAGCTGGATGAGTACTCAAGCAGTGTAGCCAACTTCCT 560
GCAGGCCCGGGGCCTGGCCTCGGGCGATGTGGCTGCCATC 600
        610       620       630       640
TTCATGGAGAACCGCAATGAGTTCGTGGGCCTATGGCTGG 640
GCATGGCCAAGCTCGGTGTGGAGGCAGCCCTCATCAACAC 680
CAACCTGCGGCGGGATGCTCTGCTCCACTGCCTCACCACC 720
TCGCGCGCACGGGCCCTTGTCTTTGGCAGCGAAATGGCCT 760
CAGCCATCTGTGAGGTCCATGCCAGCCTGGACCCCTCGCT 800
        810       820       830       840
CAGCCTCTTCTGCTCTGGCTCCTGGGAGCCCGGTGCGGTG 840
CCTCCAAGCACAGAACACCTGGACCCTCTGCTGAAAGATG 880
CTCCCAAGCACCTTCCCAGTTGCCCTGACAAGGGCTTCAC 920
AGATAAACTGTTCTACATCTACACATCCGGCACCACAGGG 960
CTGCCCAAGGCCGCCATCGTGGTGCACAGCAGGTATTACC 1000
        1010      1020      1030      1040
GCATGGCTGCCCTGGTGTACTATGGATTCCGCATGCGGCC 1040
CAACGACATCGTCTATGACTGCCTCCCCCTCTACCACTCA 1080
GCAGGAAACATCGTGGGAATCGGCCAGTGCCTGCTGCATG 1120
GCATGACGGTGGTGATTCGGAAGAAGTTCTCAGCCTCCCG 1160
GTTCTGGGACGATTGTATCAAGTACAACTGCACGATTGTG 1200
```

Fig. 50A

6650-4050.60

hsFATP4 full length

```
        1210        1220        1230        1240
CAGTACATTGGTGAACTGTGCCGCTACCTCCTGAACCAGC 1240
CACCGCGGGAGGCAGAAAACCAGCACCAGGTTCGCATGGC 1280
ACTAGGCAATGGCCTCCGGCAGTCCATCTGGACCAACTTT 1320
TCCAGCCGCTTCCACATACCCCAGGTGGCTGAGTTCTACG 1360
GGGCCACAGAGTGCAACTGTAGCCTGGGCAACTTCGACAG 1400
        1410        1420        1430        1440
CCAGGTGGGGGCCTGTGGTTTCAATAGCCGCATCCTGTCC 1440
TTCGTGTACCCCATCCGGTTGGTACGTGTCAACGAGGACA 1480
CCATGGAGCTGATCCGGGGGCCCGACGGCGTCTGCATTCC 1520
CTGCCAGCCAGGTGAGCCGGGCCAGCTGGTGGGCCGCATC 1560
ATCCAGAAAGACCCCCTGCGCCGCTTCGATGGCTACCTCA 1600
        1610        1620        1630        1640
ACCAGGGCGCCAACAACAAGAAGATTGCCAAGGATGTCTT 1640
CAAGAAGGGGGACCAGGCCTACCTTACTGGTGATGTGCTG 1680
GTGATGGACGAGCTGGGCTACCTGTACTTCCGAGACCGCA 1720
CTGGGGACACGTTCCGCTGGAAAGGTGAGAACGTGTCCAC 1760
CACCGAGGTGGAAGGCACACTCAGCCGCCTGCTGGACATG 1800
        1810        1820        1830        1840
GCTGACGTGGCCGTGTATGGTGTCGAGGTGCCAGGAACCG 1840
AGGGCCGGGCCGGAATGGCTGCTGTGGCCAGCCCCACTGG 1880
CAACTGTGACCTGGAGCGCTTTGCTCAGGTCTTGGAGAAG 1920
GAACTGCCCCTGTATGCGCGCCCCATCTTCCTGCGCCTCC 1960
TGCCTGAGCTGCACAAAACAGGAACCTACAAGTTCCAGAA 2000
        2010        2020        2030        2040
GACAGAGCTACGGAAGGAGGGCTTTGACCCGGCTATTGTG 2040
AAAGACCCGCTGTTCTATCTAGATGCCCAGAAGGGCCGCT 2080
ACGTCCCGCTGGACCAAGAGGCCTACAGCCGCATCCAGGC 2120
AGGCGAGGAGAAGCTGTGATTCCCCCCATCCCTCTGAGGG 2160
CCGGCGGATGCTGGATCCGGAGCCCCAGGTTCCGCCCCAG 2200
        2210        2220        2230        2240
AGCGGTCCTGGACAAGGCCAGACCAAAGCAAGCAGGGCCT 2240
GGCACCTCCATCCTGAGGTGCTGCCCCTCCATCCAAAACT 2280
GCCAAGTGACTCATTGCCTTCCCAACCCTTCCAGAGGCTT 2320
TCTGTGAAAGTCTCATGTCCAAGTTCCGTCTTCTGGGCTG 2360
GGCAGGCCCTCTGGTTCCCAGGCTGAGACTGACGGGTTTT 2400
        2410        2420        2430        2440
CTCAGGATGATGTCTTGGGTGAGGGTAGGGAGAGGACAAG 2440
GGGTCACCGAGCCCTTCCCAGAGAGCAGGGAGCTTATAAA 2480
TGGAACCAGAGCAGAAGTCCCCAGACTCAGGAAGTCAACA 2520
GAGTGGGCAGGGACAGTGGTAGCATCCATCTGGTGGCCAA 2560
AGAGAATCGTAGCCCCAGAGCTGCCCAAGTTCACTGGGCT 2600
```

Fig. 50B

6636250 "+0550+50

hsFATP4 full length

```
        2610        2620        2630        2640
CCACCCCCACCTCCAGGAGGGGAGGAGAGGACCTGACATC 2640
TGTAGGTGGCCCCTGATGCCCCATCTACAGCAGGAGGTCA 2680
GGACCACGCCCCTGGCCTCTCCCCACTCCCCCATCCTCCT 2720
CCCTGGGTGGCTGCCTGATTATCCCTCAGGCAGGGCCTCT 2760
CAGTCCTTGTGGGTCTGTGTCACCTCCATCTCAGTCTTGG 2800
        2810        2820        2830        2840
CCTGGCTATGAGGGGAGGAGGAATGGGAGAGGGGGCTCAG 2840
GGGCCAATAAACTCTGCCTTGAGTCCTCCTAAAAAAAAAA 2880
AAAAAAAAAAAAAAAAAAAAAAAAAAA 2907
```

Fig. 50C

6636650.1050450

hsFATP4 full length. protein

```
          10         20         30         40
          |          |          |          |
MLLGASLVGVLLFSKLVLKLPWTQVGFSLLFLYLGSGGWR 40
FIRVFIKTIRRDIFGGLVLLKVKAKVRQCLQERRTVPILF 80
ASTVRRHPDKTALIFEGTDTHWTFRQLDEYSSSVANFLQA 120
RGLASGDVAAIFMENRNEFVGLWLGMAKLGVEAALINTNL 160
RRDALLHCLTTSRARALVFGSEMASAICEVHASLDPSLSL 200
         210        220        230        240
         |          |          |          |
FCSGSWEPGAVPPSTEHLDPLLKDAPKHLPSCPDKGFTDK 240
LFYIYTSGTTGLPKAAIVVHSRYYRMAALVYYGFRMRPND 280
IVYDCLPLYHSAGNIVGIGQCLLHGMTVVIRKKFSASRFW 320
DDCIKYNCTIVQYIGELCRYLLNQPPREAENQHQVRMALG 360
NGLRQSIWTNFSSRFHIPQVAEFYGATECNCSLGNFDSQV 400
         410        420        430        440
         |          |          |          |
GACGFNSRILSFVYPIRLVRVNEDTMELIRGPDGVCIPCQ 440
PGEPGQLVGRIIQKDPLRRFDGYLNQGANNKKIAKDVFKK 480
GDQAYLTGDVLVMDELGYLYFRDRTGDTFRWKGENVSTTE 520
VEGTLSRLLDMADVAVYGVEVPGTEGRAGMAAVASPTGNC 560
DLERFAQVLEKELPLYARPIFLRLLPELHKTGTYKFQKTE 600
         610        620        630        640
         |          |          |          |
LRKEGFDPAIVKDPLFYLDAQKGRYVPLDQEAYSRIQAGE 640
EKL 643
```

Fig. 51

SEQ ID NO: 50

>hsFATP5(partial)
GTCGTTGGGATCCTCGGCTGCTTAGATCTCGGAGCCACCTGTGTTCTGGCCCCCAAG
TTCTCTACTTCCTGCTTCTGGGA
TGACTGTCGGCAGCATGGCGTGACAGTGATCCTGTATGTGGGCGAGCTCCTGCGATA
CTTGTGTAACATTCCCCAGCAAC
CAGAGGACCGGACACATACAGTCCGCCTGGCAATGGGCAATGGACTACGGGCTGAT
GTGTGGGGAGACCTTCCAGCAGCG
TTTCGGTCCTATTTCGGATCTNGGGAAGTCTTACGGGCTTCCACAGAAGGGCAACAT
GGGGCTTTAGTTCAAATATTGTT
GGGGGCGCTGCGGGGCCCTGGGGGCAAAGATGGAGCTTGCCTCCTCCGAATGCTGT
CCCCCTTTGAGCTGGTGCAGTTCG
ACATGGAGGCGGCGGAGCCTGTGAGGGACAATCAGGGCTTCTGCATCCCTGTAGGG
CTAGGGGAGCCGGGGCTGCTGTTG
ACCAAGGTGGTAAGCCAGCAACCCTTCGTGGGCTACCGCGGCCCCCGAGAGCTGTC
GGAACGGAAGCTGGTGCGCAACGT
GCGGCAATCGGGCGACGTTTACTACAACACCGGGGACGTACTGGCCATGGACCGCG
AAGGCTTCCTCTACTTCCGCGACC
GACTCGGGGACACCTTCCGATGGAAGGGCGAGAACGTGTCCACGCACGAGGTGGAG
GGCGTGTTGTCGCAGGTGGACTTC
TTGCAACAGGTTAACGTGTATGGCGTGTGCGTGCCAGGTTGTGAGGGTAAGGTGGGC
ATGGCTGCTGTGGCATTAGCCCC
CGGCCAGACTTTCGACGGGGAGAAGTTGTACCAGCACGTTCGCGCTTGGCTCCCTGC
CTACGCTACCCCCCATTTCATCC
GCATCCAGGACGCCATGGAGGTCACCAGCACGTTCAAACTGATGAAGACCCGGTTG
GTGCGTGAGGGCTTCAATGTGGGG
ATCGTGGTTGACCCTCTGTTTGTACTGGACAACCGGGCCCAGTCCTTCCGGCCCCTG
ACGGCAGAAATGTACCAGGCTGT
GTGTGAGGGAACCTGGAGGCTCTGATCACCTGGCCAACCCACTGGGGTAGGGATCA
AAGCCAGCCACCCCCACCCCAACA
CACTCGGTGTCCCTTTCATCCTGGGCCTGTGTGAATCCCAGCCTGGCCATACCCTCA
ACCTCAGTGGGCTGGAAATGACA
GTGGGCCCTGTAGCAGTGGCAGAATAAACTCAGMTGYGTTCACAGAAA

Fig. 52

09463940 "040560

hsFATP5partial.protein

...

```
         10        20        30        40
VVGILGCLDLGATCVLAPKFSTSCFWDDCRQHGVTVILYV 40
GELLRYLCNIPQQPEDRTHTVRLAMGNGLRADVWGDLPAA 80
FRSYFGSXEVLRASTEGQHGALVQILLGALRGPGGKDGAC 120
LLRMLSPFELVQFDMEAAEPVRDNQGFCIPVGLGEPGLLL 160
TKVVSQQPFVGYRGPRELSERKLVRNVRQSGDVYYNTGDV 200
        210       220       230       240
LAMDREGFLYFRDRLGDTFRWKGENVSTHEVEGVLSQVDF 240
LQQVNVYGVCVPGCEGKVGMAAVALAPGQTFDGEKLYQHV 280
RAWLPAYATPHFIRIQDAMEVTSTFKLMKTRLVREGFNVG 320
IVVDPLFVLDNRAQSFRPLTAEMYQAVCEGTWRL 354
```

Fig. 53

hsFATP6 full lenght.DNA

```
         10        20        30        40
AACGGCAAGTAAGCGCAACGCAATTAATGTGAGTAGCTCA 40
CTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGG 80
CTCGTATGTTGTGTGGAATTGTGAGCGGATACCAATTTCA 120
CACAGGAACCAGCTATGACATGATTACGAATTTAATACGA 160
CTCACTATAGGGAATTTGGCCCTCGAGGCCAAGAATTCGG 200
        210       220       230       240
CACGAGGGGTGCTGAGCCCCTGCGCGGTTTCTGGTGCGTA 240
GAGACTGTAAATCGCTGCGCTTCTCAGTCATCATCATCCC 280
AGCTTTTCCCGGCTCGAATTCAGCCTCCAACTCAAGCTCG 320
CGGGAAAGACTACCTGAGAGGAGAAAAGCTTCTGTCCCTG 360
GACCTTCTTCTGAGGGTGGAGTCGGAGGCTCCCTGCTTTC 400
        410       420       430       440
CAGCCGCCCAGTGACCCAAGCTTAATCTTCAGCACCACTT 440
GGGGCGACCTTTTCGGTGCAAACCTACGATTCTGTTTCTC 480
AGGATTCCTCCCCATCCCGCTTCGCCCCGGAAAAGCTGAC 520
AAGAACTTCAGGTGTAAGCCCTGAGTAGTGAGGATCTGCG 560
GTCTCCGTGGAGAGCTGTGCCTGGAAGAGAAGGACGCTGG 600
        610       620       630       640
TGGGGGCTGAGATCAGAGCTGTCTTCTGGCCCAGTTGCCC 640
CCATGCTTCTGTCATGGCTAACAGTTCTAGGGGCTGGAAT 680
GGTCGTCCTGCACTTCTTGCAGAAACTCCTGTTCCCTTAC 720
TTTTGGGATGACTTCTGGTTCGTGTTGAAGGTGGTGCTCA 760
TTATAATTCGGCTGAAGAAGTATGAAAAGAGAGGGGAGCT 800
        810       820       830       840
GGTGACTGTGCTGGATAAATTCTTGAGTCATGCCAAAAGA 840
CAACCTCGGAAACCTTTCATCATCTATGAGGGAGACATCT 880
ACACCTATCAGGATGTAGACAAAAGGAGCAGCAGAGTGGC 920
CCATGTCTTCCTGAACCATTCCTCTCTGAAAAAGGGGGAC 960
ACGGTGGCTCTGCTGATGAGCAATGAGCCGGACTTCGTTC 1000
       1010      1020      1030      1040
ACGTGTGGTTCGGCCTCGCCAAGCTGGGCTGCGTGGTGGC 1040
CTTTCTCAACACCAACATTCGCTCCAACTCCCTCCTGAAT 1080
TGCATCCGCGCCTGTGGGCCCAGAGCCCTAGTGGTGGGCG 1120
CAGATTTGCTTGGAACGGTAGAAGAAATCCTTCCAAGCCT 1160
CTCAGAAAATATCAGTGTTTGGGGGATGAAAGATTCTGTT 1200
```

Fig. 54A

```
        1210        1220        1230        1240
CCACAAGGTGTAATTTCACTCAAAGAAAAACTGAGCACCT 1240
CACCTGATGAGCCCGTGCCACGCAGCCACCATGTTGTCTC 1280
ACTCCTCAAGTCTACTTGTCTTTACATTTTTACCTCTGGA 1320
ACAACAGGTCTACCAAAAGCAGCTGTGATTAGTCAGCTGC 1360
AGGTTTTAAGGGGTTCTGCTGTCCTGTGGGCTTTTGGTTG 1400
        1410        1420        1430        1440
TACTGCTCATGACATTGTTTATATAACCCTTCCTCTGTAT 1440
CATAGTTCAGCAGCTATCCTGGGAATTTCTGGATGTGTTG 1480
AGTTGGGTGCCACTTGTGTGTTAAAGAAGAAATTTTCAGC 1520
AAGCCAGTTTTGGAGTGACTGCAAGAAGTATGATGTGACT 1560
GTGTTTCAGTATATTGGAGAACTTTGTCGCTACCTTTGCA 1600
        1610        1620        1630        1640
AACAATCTAAGAGAGAAGGAGAAAAGGATCATAAGGTGCG 1640
TTTGGCAATTGGAAATGGCATACGGAGTGATGTATGGAGA 1680
GAATTTTTAGACAGATTTGGAAATATAAAGGTGTGTGAAC 1720
TTTATGCAGCTACCGAATCAAGCATATCTTTCATGAACTA 1760
CACTGGGAGAATTGGAGCAATTGGGAGAACAAATTTGTTT 1800
        1810        1820        1830        1840
TACAAACTTCTTTCCACTTTTGACTTAATAAAGTATGACT 1840
TTCAGAAAGATGAACCCATGAGAAATGAGCAGGGTTGGTG 1880
TATTCATGTGAAAAAAGGAGAACCTGGACTTCTCATTTCT 1920
CGAGTGAATGCAAAAAATCCCTTCTTTGGCTATGCTGGGC 1960
CTTATAAGCACACAAAAGACAAATTGCTTTGTGATGTTTT 2000
        2010        2020        2030        2040
TAAGAAGGGAGATGTTTACCTTAATACTGGAGACTTAATA 2040
GTCCAGGATCAGGACAATTTCCTTTATTTTTGGGACCGTA 2080
CTGGAGACACTTTCAGATGGAAAGGAGAAAATGTCGCAAC 2120
CACTGAGGTTGCTGATGTTATTGGAATGTTGGATTTCATA 2160
CAGGAAGCAAACGTCTATGGTGTGGCTATATCAGGTTATG 2200
        2210        2220        2230        2240
AAGGAAGAGCAGGAATGGCTTCTATTATTTTAAAACCAAA 2240
TACATCTTTAGATTTGGAAAAAGTTTATGAACAAGTTGTA 2280
ACATTTCTACCAGCTTATGCTTGTCCACGATTTTTAAGAA 2320
TTCAGGAAAAAATGGAAGCAACAGGAACATTCAAACTATT 2360
GAAGCATCAGTTGGTGGAAGATGGATTTAATCCACTGAAA 2400
        2410        2420        2430        2440
ATTTCTGAACCACTTTACTTCATGGATAACTTGAAAAAGT 2440
CTTATGTTCTACTGACCAGGGAACTTTATGATCAAATAAT 2480
GTTAGGGGAAATAAAACTTTAAGATTTTTATATCTAGAAC 2520
TTTCATATGCTTTCTTAGGAAGAGTGAGAGGGGGGTATAT 2560
GATTCTTTATGAAATGGGGAAAGGGAGCTAACATTAATTA 2600
```

Fig. 54B

5636260 "40550460

hsFATP6 full lenght.DNA

2610 2620 2630 2640

```
TGCATGTACTATATTTCCTTAATATGAGAGATAATTTTTT 2640
AATTGCATAAGAATTTTAATTTCTTTTAATTGATATAAAC 2680
ATTAGTTGATTATTCTTTTTATCTATTTGGAGATTCAGTG 2720
CATAACTAAGTATTTTCCTTAATACTAAAGATTTTAAATA 2760
ATAAATAGTGGCTAGCGGTTTGGACAATCACTAAAAATGT 2800
```

2810 2820 2830 2840

```
ACTTTCTAATAAGTAAAATTTCTAATTTTGAATAAAAGAT 2840
TAAATTTTACTGAAAAAAAAAAAAAAAAAAAAAATTGGCG 2880
GCCGC 2885
```

Fig. 54C

hsFATP6 full lenght.protein

...

```
         10        20        30        40
         |         |         |         |
MLLSWLTVLGAGMVVLHFLQKLLFPYFWDDFWFVLKVVLI 40
IIRLKKYEKRGELVTVLDKFLSHAKRQPRKPFIIYEGDIY 80
TYQDVDKRSSRVAHVFLNHSSLKKGDTVALLMSNEPDFVH 120
VWFGLAKLGCVVAFLNTNIRSNSLLNCIRACGPRALVVGA 160
DLLGTVEEILPSLSENISVWGMKDSVPQGVISLKEKLSTS 200
        210       220       230       240
        |         |         |         |
PDEPVPRSHHVVSLLKSTCLYIFTSGTTGLPKAAVISQLQ 240
VLRGSAVLWAFGCTAHDIVYITLPLYHSSAAILGISGCVE 280
LGATCVLKKKFSASQFWSDCKKYDVTVFQYIGELCRYLCK 320
QSKREGEKDHKVRLAIGNGIRSDVWREFLDRFGNIKVCEL 360
YAATESSISFMNYTGRIGAIGRTNLFYKLLSTFDLIKYDF 400
        410       420       430       440
        |         |         |         |
QKDEPMRNEQGWCIHVKKGEPGLLISRVNAKNPFFGYAGP 440
YKHTKDKLLCDVFKKGDVYLNTGDLIVQDQDNFLYFWDRT 480
GDTFRWKGENVATTEVADVIGMLDFIQEANVYGVAISGYE 520
GRAGMASIILKPNTSLDLEKVYEQVVTFLPAYACPRFLRI 560
QEKMEATGTFKLLKHQLVEDGFNPLKISEPLYFMDNLKKS 600
        610       620       630       640
        |         |         |         |
YVLLTRELYDQIMLGEIKL. 620
```

Fig. 55

09530450.9

mFATP1 full length.DNA

```
1
        10         20         30         40
AAGTTCCCACTCCAGACTTCTGCGAGAACCCGTGAGGAAG 40
CAGCGAGAACCGGGGGTTTGCAAGCCAGAGAAGGATGCGG 80
ACTCCGGGAGCAGGAACAGCCTCTGTGGCCTCATTGGGGC 120
TGCTTTGGCTTCTGGGACTTCCGTGGACCTGGAGCGCGGC 160
GGCGGCGTTCGGTGTGTACGTGGGTAGCGGTGGCTGGCGA 200
       210        220        230        240
TTTCTGCGTATCGTCTGCAAGACGGCGAGGCGAGACCTCT 240
TTGGCCTCTCTGTTCTGATCCGCGTGCGGCTAGAGCTACG 280
ACGACACCGGCGAGCAGGAGACACGATCCCACGCATCTTC 320
CAGGCCGTGGCCCAGCGACAGCCGGAGCGCCTGGCGCTGG 360
TAGATGCGAGTAGCGGTATCTGCTGGACCTTCGCACAGCT 400
       410        420        430        440
AGACACCTACTCCAATGCTGTGGCCAATCTGTTCCTCCAG 440
CTGGGCTTTGCGCCAGGCGATGTGGTGGCTGTGTTCCTGG 480
AAGGCCGGCCCGAGTTCGTGGGACTGTGGCTGGGCCTGGC 520
CAAGGCCGGTGTAGTGGCTGCGCTTCTCAATGTCAACCTG 560
AGGCGGGAGCCCCTTGCCTTCTGCTTGGGCACATCAGCTG 600
       610        620        630        640
CCAAGGCCCTCATTTATGGCGGGGAGATGGCAGCGGCGGT 640
GGCGGAGGTGAGTGAGCAGCTGGGGAAGAGCCTGCTCAAG 680
TTCTGCTCTGGAGATCTGGGGCCTGAGAGCGTCCTGCCTG 720
ACACGCAGCTTCTGGACCCCATGCTTGCTGAGGCGCCCAC 760
CACACCCCTGGCACAGGCCCCAGGCAAGGGCATGGATGAT 800
       810        820        830        840
CGGCTATTTTACATCTATACTTCTGGGACCACCGGACTTC 840
CTAAGGCGGCCATTGTGGTGCACAGCAGGTACTACCGCAT 880
CGCAGCCTTCGGCCACCATTCCTACAGCATGCGGGCCAAC 920
GATGTGCTCTATGACTGCCTACCTCTCTACCACTCAGCAG 960
GGAACATCATGGGCGTGGGACAGTGTATCATCTACGGGTT 1000
      1010       1020       1030       1040
AACGGTGGTACTGCGCAAGAAGTTCTCCGCCAGCCGCTTC 1040
TGGGACGACTGTGTCAAATATAATTGCACGGTAGTGCAGT 1080
ACATCGGTGAAATATGCCGCTACCTGCTAAGGCAGCCGGT 1120
TCGCGATGTAGAGCGGCGGCACCGCGTGCGCCTGGCCGTG 1160
GGTAACGGACTGCGGCCAGCCATCTGGGAGGAGTTCACGC 1200
```

Fig. 56A

09450502 - 050303

mFATP1 full length.DNA

1210 1220 1230 1240

```
AGGGTTTCGGTGTGCGACAGATTGGCGAGTTCTACGGCGC 1240
CACCGAATGCAACTGCAGCATTGCCAACATGGACGGCAAG 1280
GTCGGCTCCTGCGGCTTCAACAGCCGTATCCTCACGCATG 1320
TGTACCCCATCCGTCTGGTCAAGGTCAACGAGGACACGAT 1360
GGAGCCACTGAGGGACTCCCAAGGCCTCTGCATCCCGTGC 1400
```

1410 1420 1430 1440

```
CAGCCCGGGGAACCTGGGCTTCTCGTGGGCCAGATCAACC 1440
AGCAAGACCCTCTGCGGCGCTTCGATGGCTATGTTAGTGA 1480
CAGCGCCACCAACAAGAAGATTGCCCACAGCGTGTTCCGA 1520
AAGGGGGACAGCGCCTACCTTTCAGGTGACGTGCTAGTGA 1560
TGGACGAGCTGGGGTACATGTACTTCCGTGACCGCAGCGG 1600
```

1610 1620 1630 1640

```
GGATACCTTCCGATGGCGCGGCGAGAACGTATCCACCACG 1640
GAGGTGGAAGCCGTGCTGAGCCGCCTGTTGGGCCAGACGG 1680
ACGTGGCTGTGTATGGAGTGGCTGTGCCAGGAGTGGAGGG 1720
GAAAAGCGGCATGGCGGCCATTGCAGACCCCCACAACCAG 1760
CTGGACCCTAACTCAATGTACCAGGAATTGCAGAAGGTTC 1800
```

1810 1820 1830 1840

```
TTGCATCCTATGCCCAGCCCATCTTCCTGCGTCTTCTGCC 1840
CCAAGTGGATACAACAGGCACCTTCAAGATCCAGAAGACC 1880
CGACTACAGCGTGAAGGCTTTGACCCCCGCCAGACCTCAG 1920
ACCGGCTCTTCTTTCTAGACCTGAAACAGGGACGCTACCT 1960
ACCCCTGGATGAGAGAGTCCATGCCCGCATCTGCGCAGGC 2000
```

2010 2020 2030 2040

```
GACTTCTCACTCTGAGCCTGGTGAGTGGGATGGCCCTGGA 2040
CTTGTGAGACCAGGGAGCCGGACACCCCTGTTCAGGTGTT 2080
TCTCCTGCCTGGCCACGTGGCCAGCAGCACCTGTGGGTGC 2120
AGGAAACTGGAACCTGAGTGGCCGGGTGTCCCTTTCCTAC 2160
AACCCACCATGCACACATCTAGCCTCTGCCTTGGTCTTTT 2200
```

2210 2220 2230 2240

```
TCTCCATCTCTTTCCTCCGTGCCCAGCAGGAGCCCCACAG 2240
ACACATTGGCTGCTGTGTCCTGCAGTGGGACCGGTGTCTA 2280
GGGGTCCATGCTGCAGGCTGTGACCCGCACTGGTGCCCAC 2320
CTCCCTTCCCCATTGTGCCTTAGGTTCCTCCACTGTGCGC 2360
CGGTGAAGCAAGTGGGGACCCACATAGCTGTTGTCCCTGC 2400
```

2410 2420 2430 2440

```
TGAGGGTTGGTAGCAAATGCACCCTCATGTCAGCTGGGAG 2440
ACACATGCAGTCTCCCACTGACCCCCAATCAACTGAAGAT 2480
ACTGTTTTGTATTATTGTTTTGAGATAGGGTCTCACTGTG 2520
GAGGCCAAGCTGGCCTCAGGCTCACCACTCTACTGCCTCC 2560
GGGCACCAGCCTGCAGTTTGATGACATGTATGCACTATTG 2600
```

Fig. 56B

mFATP1 full length.DNA

2610 2620 2630 2640

TTCTAAGGGTCTTCTGAGTCCCTGCTTTCCCCTCATGTCC 2640
TAAAACCTTCCAGAACTGACTCTGATCACTTGGATGTAGC 2680
TAGTGTTGGCCCTGCCCACGTGTGTCAATTCAGGGGTCCC 2720
CAGGCATCATCTCTGGAGGCCCTAACCTTGGCAAAGCTTG 2760
GATGTCCTCACATCACAGCAGGAGACCCAGGAAGGTTGCT 2800

2810 2820 2830 2840

GTGGTGTCTCTTGGGCACCCCTGGCGGCAGCCGTGGACAT 2840
GCTTCCCTGCTGTGATAGCCCAAACTGTTGCCTATGACAT 2880
TTGAGGTCTACCCTTCTGGCTGCCATGGTCCCCATTGAGA 2920
TCTTTGGTGACTCACCTCAGCCACCAAGCCAGGCCTCTGC 2960
CTTCCTTCAGCTCTAAGGGCATGAAGGGTGTGGACAGAGC 3000

3010 3020 3030 3040

AGCCACAGGCTGCCCACAGTCACCCACATGCAAGTGTTAT 3040
TTCCTTGTTTGTTTTAAAAAAATAAACATGCTGAGCCTTG 3080
AAAAAAAAAAAAAAAAAA 3098

Fig. 56C

mFATP1 full lenght.protein

```
          10        20        30        40
MRTPGAGTASVASLGLLWLLGLPWTWSAAAAFGVYVGSGG 40
WRFLRIVCKTARRDLFGLSVLIRVRLELRRHRRAGDTIPR 80
IFQAVAQRQPERLALVDASSGICWTFAQLDTYSNAVANLF 120
LQLGFAPGDVVAVFLEGRPEFVGLWLGLAKAGVVAALLNV 160
NLRREPLAFCLGTSAAKALIYGGEMAAAVAEVSEQLGKSL 200
         210       220       230       240
LKFCSGDLGPESVLPDTQLLDPMLAEAPTTPLAQAPGKGM 240
DDRLFYIYTSGTTGLPKAAIVVHSRYYRIAAFGHHSYSMR 280
ANDVLYDCLPLYHSAGNIMGVGQCIIYGLTVVLRKKFSAS 320
RFWDDCVKYNCTVVQYIGEICRYLLRQPVRDVERRHRVRL 360
AVGNGLRPAIWEEFTQGFGVRQIGEFYGATECNCSIANMD 400
         410       420       430       440
GKVGSCGFNSRILTHVYPIRLVKVNEDTMEPLRDSQGLCI 440
PCQPGEPGLLVGQINQQDPLRRFDGYVSDSATNKKIAHSV 480
FRKGDSAYLSGDVLVMDELGYMYFRDRSGDTFRWRGENVS 520
TTEVEAVLSRLLGQTDVAVYGVAVPGVEGKSGMAAIADPH 560
NQLDPNSMYQELQKVLASYAQPIFLRLLPQVDTTGTFKIQ 600
         610       620       630       640
KTRLQREGFDPRQTSDRLFFLDLKQGRYLPLDERVHARIC 640
AGDFSL.  647
```

Fig. 57

95950-4050

mVLACS(FATP2)full length.DNA

```
         10        20        30        40
GACACAGTACTGCCGATGTTGGACAGAGGATCGCTTAACA 40
GAACGAAATCTCAAAACAAATTAACAGGACCCGGTTGCTT 80
GATTTCCCAAATCAGAAAAGGCTCGAAATGTCTAGAGGGG 120
CTGACTGATGCAGCGGTGACCCGGACTGGAGACAGTTGGA 160
CGCGATCATCTCTGGTGCTTTTGTTCAACCTTGAAACCTT 200
        210       220       230       240
CGCCACAGGAGACTTGCCTGAGCAGAGAAGCAAACGTGGA 240
GAAACAAAGAGAGATCTAGCGAAAAGCCTCTGGGACCAAG 280
GAGGGGAGGTGGGACTCTGGGTTGGCGGTGGCACCTGCTG 320
CCGGCTATTAATAATAGGGTCGCGATGCGTTTATAAGGTG 360
TTTGATTAAACAAAGACTCTATGAGAGAAGAATAACTAGC 400
        410       420       430       440
AACAGCCCCACGTCTGAGTCGTCGCCTCCGACCTTTTTCA 440
ACGTGGGTTCTTTGGGCCGAGCGTCGTTTGCCGAGAACTA 480
GATCTCACCTGACCCCAGACGCTGAAAACAAGCGCTGTGG 520
CATCCTGGGCCACCCAAGCTGACAAGGGCGCGCCCCCTGA 560
GCACACGAGGTGCCCCACGAGGGGGAGGGACCCACAGCCG 600
        610       620       630       640
TCCCGCCCGCACCGCGGTGTCCGCTGCGGGCACCTGCAGC 640
CGAGCCGCCACCCGCAGTCGCAGCGCGTCCGGCGGCCGAA 680
CCCGGTCGTCAGCTCGTCAGCACCTGCTCTGCTTCTCTCC 720
CGCCCGCCGCCGCGCTGCACGCCTCGAGCGCTCCCTCGGC 760
CCCGGCGGGGACCGGGGACCCCGCAGCCACCGCCATGCTG 800
        810       820       830       840
CCTGTGCTCTACACCGGCCTGGCGGGGCTGCTGCTGCTGC 840
CTCTGCTGCTCACCTGCTGCTGCCCCTACCTCCTCCAGGA 880
CGTGCGGTTCTTCCTGCAACTGGCCAACATGGCCCGGCAG 920
GTGCGCAGCTACCGGCAGCGGCGACCCGTGCGCACCATCC 960
TGCATGTCTTCTTGGAGCAAGCGCGCAAGACCCCGCACAA 1000
       1010      1020      1030      1040
GCCCTTCCTGCTGTTTCGCGACGAGACGCTTACCTACGCC 1040
CAGGTAGACCGGCGCAGCAACCAAGTAGCGCGAGCGCTGC 1080
ATGATCACCTGGGCCTGCGGCAGGGGGATTGCGTGGCCCT 1120
CTTCATGGGCAATGAGCCGGCCTACGTGTGGCTCTGGCTG 1160
GGACTGCTCAAACTGGGCTGTCCCATGGCGTGCCTCAACT 1200
```

Fig. 58A

mVLACS(FATP2)full length.DNA

```
        1210        1220        1230        1240
ACAACATCCGTGCCAAGTCTCTGCTACACTGCTTTCAGTG 1240
CTGCGGGGCGAAGGTGCTGCTGGCCTCCCCAGAGCTACAC 1280
GAAGCTGTCGAGGAGGTTCTTCCAACCCTGAAAAAGGAGG 1320
GCGTGTCCGTCTTCTACGTAAGCAGAACTTCTAACACTAA 1360
TGGCGTGGACACAGTACTGGACAAAGTAGACGGGGTGTCG 1400
        1410        1420        1430        1440
GCGGACCCCATCCCGGAGTCGTGGAGGTCTGAAGTCACGT 1440
TCACCACACCCGCAGTCTACATATATACTTCGGGCACCAC 1480
AGGTCTTCCAAAGGCTGCAACCATTAATCACCATCGCCTC 1520
TGGTATGGGACCAGCCTTGCCCTGAGGTCCGGAATTAAGG 1560
CTCATGACGTCATCTACACCACCATGCCCCTGTACCACAG 1600
        1610        1620        1630        1640
CGCGGCGCTCATGATTGGCCTCCACGGATGCATTGTGGTT 1640
GGGGCTACATTTGCTTTGCGGAGCAAATTTTCAGCCAGCC 1680
AGTTTTGGGACGACTGCAGGAAATACAACGCCACTGTCAT 1720
TCAGTACATCGGTGAACTGCTTCGGTACCTCTGCAACACG 1760
CCCCAGAAACCAAATGACCGGGACCACAAAGTGAAAATAG 1800
        1810        1820        1830        1840
CACTAGGAAATGGCTTACGAGGAGATGTGTGGAGAGAGTT 1840
CATCAAGAGATTTGGGGACATTCACATTTATGAGTTCTAC 1880
GCTTCCACTGAAGGCAACATTGGATTTATGAACTATCCAA 1920
GAAAAATCGGAGCTGTTGGAAGAGAAAATTACCTACAAAA 1960
AAAAGTTGTAAGGCACGAGCTGATCAAGTATGACGTGGAG 2000
        2010        2020        2030        2040
AAGGATGAGCCTGTCCGTGATGCAAATGGATATTGCATCA 2040
AAGTCCCCAAAGGAGAGGTTGGACTCTTGATTTGCAAAAT 2080
CACAGAGCTCACACCATTTTTTGGCTATGCTGGAGGAAAG 2120
ACCCAGACAGAGAAGAAAAAGCTCAGAGATGTTTTTAAGA 2160
AAGGAGACGTCTACTTCAACAGTGGCGATCTCCTGATGAT 2200
        2210        2220        2230        2240
CGACCGTGAAAATTTCATCTATTTTCACGACAGAGTTGGA 2240
GACACCTTCCGGTGGAAAGGAGAGAATGTAGCTACCACGG 2280
AAGTCGCTGACATTGTGGGACTGGTAGATTTTGTTGAAGA 2320
AGTGAATGTTTACGGTGTGCCCGTGCCAGGTCATGAAGGT 2360
CGCATCGGGATGGCCTCGATCAAGATGAAAGAAAACTACG 2400
        2410        2420        2430        2440
AGTTCAATGGAAAGAAACTCTTTCAGCACATCTCGGAGTA 2440
CCTGCCCAGTTACTCGAGGCCTCGGTTCCTGAGAATACAA 2480
GATACCATTGAGATCACCGGGACTTTTAAACACCGCAAAG 2520
TGACCCTGATGGAAGAGGGCTTTAACCCCTCAGTCATCAA 2560
AGATACCTTGTATTTCATGGATGACACAGAAAAAACATAC 2600
```

Fig. 58B

mVLACS(FATP2)full length.DNA

2610 2620 2630 2640

GTGCCCATGACTGAGGACATTTATAATGCCATAATTGATA 2640
AGACTCTGAAGCTCTGAATGTTGCCTGGCTCCTAACACTT 2680
CCAGAAAGAAACACAATAGGCCTAGCATAGCCCCTTCACA 2720
TGTGTAATCCAACTTTAACTTGATTAAAGGTTATAGGTGT 2760
GATTTTTCCTAGGAAATTATTCATTTAAAGGACAATTGTT 2800

2810 2820 2830 2840

TGTTTGTTTGTTTGTTTTTTATTAATTACACCAGAACGTT 2840
TGCAAGTAAAAAGATTTAAAGTCACTTATTTTTCAATGTG 2880
CACCTGCCATTTGTCCTTGCAAACTTAGCTTCTTGGAGAG 2920
AGGGCCTTATTTTTTTAAAGACATAATAAACTATGTAAAC 2960
ACT 2963

Fig. 58C

5,952,504 09/14/99

mVLACS(FATP2)full length.prot

```
          10        20        30        40
MLPVLYTGLAGLLLLPLLLTCCCPYLLQDVRFFLQLANMA 40
RQVRSYRQRRPVRTILHVFLEQARKTPHKPFLLFRDETLT 80
YAQVDRRSNQVARALHDHLGLRQGDCVALFMGNEPAYVWL 120
WLGLLKLGCPMACLNYNIRAKSLLHCFQCCGAKVLLASPE 160
LHEAVEEVLPTLKKEGVSVFYVSRTSNTNGVDTVLDKVDG 200
         210       220       230       240
VSADPIPESWRSEVTFTTPAVYIYTSGTTGLPKAATINHH 240
RLWYGTSLALRSGIKAHDVIYTTMPLYHSAALMIGLHGCI 280
VVGATFALRSKFSASQFWDDCRKYNATVIQYIGELLRYLC 320
NTPQKPNDRDHKVKIALGNGLRGDVWREFIKRFGDIHIYE 360
FYASTEGNIGFMNYPRKIGAVGRENYLQKKVVRHELIKYD 400
         410       420       430       440
VEKDEPVRDANGYCIKVPKGEVGLLICKITELTPFFGYAG 440
GKTQTEKKKLRDVFKKGDVYFNSGDLLMIDRENFIYFHDR 480
VGDTFRWKGENVATTEVADIVGLVDFVEEVNVYGVPVPGH 520
EGRIGMASIKMKENYEFNGKKLFQHISEYLPSYSRPRFLR 560
IQDTIEITGTFKHRKVTLMEEGFNPSVIKDTLYFMDDTEK 600
         610       620       630       640
TYVPMTEDIYNAIIDKTLKL. 621
```

Fig. 59

mFATP4 partial.DNA

```
         10        20        30        40
GATCAGCTCTTCTATATCTACACGTCGGGCACCACGGGGC 40
TACCCAAAGCTGCCATTGTGGTGCACAGCAGGTATTACCG 80
AATGGCTGCCCTGGTGTACTATGGATTCCGCATGCGGCCT 120
GATGACATTGTCTATGACTGCCTCCCCCTCTACCACTCAG 160
CAGGAAACATTGTGGGGATTGGCCAGTGCGTACTCCACGG 200
        210       220       230       240
CATGACTGTGGTGATCCGGAAGAAGTTTTCAGCCTCCCGG 240
TTCTGGGATGACTGTATCAAGTACAACTGCACAATTGTAC 280
AGTACATTGGTGAGCTTTGCCGCTACCTCCTGAACCAGCC 320
ACCCCGTGAGGCTGAGTCTCGGCACAAGGTGCGCATGGCA 360
CTGGGCAACGGTCTCCGGCAGTCCATCTGGACCGACTTCT 400
        410       420       430       440
CCAGCCGTTTCCACATTCCCAAGGTGGCCGAGTTCTACGG 440
GGCCACCGAGTGCAACTGTAGCTTGGGCAACTTTGACAGC 480
CAGGTGGGGGCCTGTGGCTTCAATAGCCGCATCCTGTCCT 520
TTGTGTACCCCATCCGCTTGGTACGAGTCAATGAGGATAC 560
CATGGAACTGATCCGGGGACCCGATGGCGTCTGCATTCCC 600
        610       620       630       640
TGTCAACCAGGCCAGCCAGGCCAGCTGGTGGGTCGCATCA 640
TCCAGCAGGACCCCCTACGCCGTTTTGATGGCTACCTCAA 680
CCAGGGTGCCAACAACAAGAAGATTGCTAGTGATGTCTTC 720
AAGAAAGGGGACCAAGCCTACCTCACTGGTGACGTGCTGG 760
TGATGGATGAGCTGGGCTACCTGTACTTCCGAGACCGCAC 800
        810       820       830       840
AGGGGACACGTTCCGCTGGAAAGGGGAGAATGTGTCTACC 840
ACTGAAGTGGAGGGCACACTCAGCCGCCTGCTTCAGATGG 880
CAGATGTGGCTGTTTATGGTGTTGAGGTGCCAGGAGCTGA 920
GGGCCGAGCAGGAATGGCTGCTGTGGCAAGCCCCACTAGC 960
AACTGTGACCTGGAGAGCTTTGCACAGACCTTGAAAAAGG 1000
       1010      1020      1030      1040
AGCTGCCCCTGTACGCCCGCCCCATCTTCCTCCGCTTCTT 1040
GCCTGAGCTGCACAAAACAGGAACCTTCAAGTTCCAGAAG 1080
ACAGAGTTGCGGAAGGAGGGCTTTGACCCGTCTGTTGTGA 1120
AAGACCCACTCTTCTATTTGGATGCCCGGACAGGCTGCTA 1160
TGTTGCACTGGACCAAGAGGCCTATACCCGCATCCAGGCA 1200
```

Fig. 60A

mFATP4 partial.DNA

1210 1220 1230 1240

```
GGCGAGGAGAAGCTGTGATTTCCCCCACATCCCTCTGAGG 1240
GCCAGAGGATGCTGGATTCAGAGCCCCAGCTTCCACTCCA 1280
GAAGGGGTCTGGGCAAGGCCAGACCAAAGCTAGCAGGGCC 1320
CGCACCTTCACCCTAGGTGCTGATCCCCCT 1350
```

Fig. 60B

mFATP4partial.DNA

```
        10        20        30        40
DQLFYIYTSGTTGLPKAAIVVHSRYYRMAALVYYGFRMRP  40
DDIVYDCLPLYHSAGNIVGIGQCVLHGMTVVIRKKFSASR  80
FWDDCIKYNCTIVQYIGELCRYLLNQPPREAESRHKVRMA  120
LGNGLRQSIWTDFSSRFHIPKVAEFYGATECNCSLGNFDS  160
QVGACGFNSRILSFVYPIRLVRVNEDTMELIRGPDGVCIP  200
       210       220       230       240
CQPGQPGQLVGRIIQQDPLRRFDGYLNQGANNKKIASDVF  240
KKGDQAYLTGDVLVMDELGYLYFRDRTGDTFRWKGENVST  280
TEVEGTLSRLLQMADVAVYGVEVPGAEGRAGMAAVASPTS  320
NCDLESFAQTLKKELPLYARPIFLRFLPELHKTGTFKFQK  360
TELRKEGFDPSVVKDPLFYLDARTGCYVALDQEAYTRIQA  400
       410       420       430       440
GEEKL.  406
```

Fig. 61

mmFATP1 full length.DNA

```
         10         20         30         40
ATGCGGGCTCCTGGAGCAGGAACAGCCTCTGTGGCCTCAC 40
TGGCGCTGCTTTGGTTTCTGGGACTTCCGTGGACCTGGAG 80
CGCGGCGGCGGCGTTCTGTGTGTACGTGGGTGGCGGCGGC 120
TGGCGCTTTCTGCGTATCGTCTGCAAGACGGCGAGGCGAG 160
ACCTCTTTGGCCTCTCTGTTCTGATTCGTGTTCGGCTAGA 200
        210        220        230        240
GCTGCGACGACACCGGCGAGCAGGAGACACGATCCCGTGC 240
ATCTTCCAGGCTGTGGCCCGGCGACAACCAGAGCGCCTGG 280
CACTGGTGGACGCCAGTAGTGGTATATGCTGGACCTTCGC 320
ACAGCTGGACACCTACTCCAATGCTGTAGCCAACCTGTTC 360
CGCCAGCTGGGCTTTGCACCAGGCGATGTGGTGGCTGTGT 400
        410        420        430        440
TCCTGGAGGGCCGGCCGGAGTTCGTGGGACTGTGGCTGGG 440
CCTGGCCAAGGCCGGTGTGGTGGCTGCTCTTCTCAATGTC 480
AACCTGAGGCGGGAGCCCCTGGCCTTCTGCCTGGGCACAT 520
CAGCTGCCAAGGCCCTCATTTATGGCGGGGAGATGGCAGC 560
GGCGGTGGCGGAGGTGAGCGAGCAGCTGGGGAAGAGCCTC 600
        610        620        630        640
CTCAAGTTCTGCTCTGGAGATCTGGGGCCTGAGAGCATCC 640
TGCCTGACACGCAGCTCCTGGACCCCATGCTTGCTGAGGC 680
GCCCACCACACCCCTGGCACAAGCCCCAGGCAAGGGCATG 720
GATGATCGGCTGTTTTACATCTATACTTCTGGGACCACCG 760
GGCTTCCTAAGGCTGCCATTGTGGTGCACAGCAGGTACTA 800
        810        820        830        840
CCGCATTGCTGCCTTTGGCCACCATTCCTACAGCATGCGT 840
GCCGCCGATGTGCTCTATGACTGCCTGCCACTCTACCACT 880
CTGCAGGGAACATCATGGGTGTGGGGCAGTGCGTCATCTA 920
CGGGTTGACGGTGGTACTGCGCAAGAAGTTCTCCGCCAGC 960
CGCTTCTGGGATGACTGTGTCAAGTACAATTGCACGGTAG 1000
        1010       1020       1030       1040
TGGATGACATAGGTGAAATCTGCCGCTACCTGCTGAGGCA 1040
GCCGGTTCGCGACGTGGAGCAGCGACACCGCGTGCGCCTG 1080
GCCGTGGGTAATGGGCTGCGGCCAGCCATCTGGGAGGAGT 1120
TCACGCAGCGCTTCGGTGTGCCACAGATCGGCGAGTTCTA 1160
CGGCGCTACCGAGTGCAACTGCAGCATTGCCAACATGGAC 1200
```

Fig. 62A

09450450+09

```
        1210        1220        1230        1240
GGCAAGGTCGGCTCCTGCGGCTTCAACAGCCGTATCCTCA 1240
CGCATGTGTACCCCATCCGTCTGGTCAAGGTCAATGAGGA 1280
CACGATGGAGCCACTGCGGGACTCCGAGGGCCTCTGCATC 1320
CCGTGCCAGCCCGGGGAACCCGGCCTTCTCGTGGGCCAGA 1360
TCAACCAGCAGGACCCTCTGCGGCGTTTCGATGGTTATGT 1400
        1410        1420        1430        1440
TAGTGACAGTGCCACCAACAAGAAGATTGCCCACAGCGTT 1440
TTCCGAAAGGGCGATAGCGCCTACCTCTCAGGTGACGTGC 1480
TAGTGATGGACGAGCTGGGCTACATGTATTTCCGTGACCG 1520
CAGCGGGGACACCTTCCGCTGGCGCGGGGAGAACGTGTCC 1560
ACCACGGAGGTGGAAGCCGTGCTGAGCCGCCTACTGGGCC 1600
        1610        1620        1630        1640
AGACGGACGTGGCTGTGTATGGGGTGGCTGTGCCAGGAGT 1640
GGAGGGGAAAGCTGGCATGGCAGCCATCGCAGATCCCCAC 1680
AGCCAGTTGGACCCTAACTCAATGTACCAGGAATTACAGA 1720
AGGTTCTTGCATCCTATGCTCGGCCCATCTTCCTGCGTCT 1760
TCTGCCCCAGGTGGATACCACAGGCACCTTCAAGATCCAG 1800
        1810        1820        1830        1840
AAGACCCGGCTGCAGCGTGAAGGCTTTGACCCCCGTCAGA 1840
CCTCAGACAGGCTCTTCTTTCTAGACCTGAAGTCCGGCAC 1880
GAGGTATCTACCCCTGGATGAGAGAGTCCATGCCCGCATT 1920
TGCGCAGGCGACTTCTCACTCTGAGCCTGGAGAGTGGGCT 1960
GGGCCTGGACTCCTGAGACCTGGGAGCCTGACACCCCTCT 2000
        2010        2020        2030        2040
TCGGGTGCTTCTCCTGCCTGGCCACATGGACAGCAGCACC 2040
TGTGAGAGTAGGAAAATGGAACCTGAGTGGCTGGGACCCC 2080
TCTCCTACTTCCCACTATGCATCCATTTTGCCTCTGCCTT 2120
GATCTTTTTCTCCATCTCTTTTCTCCCTACCCAGCAGGAG 2160
CCCCACAAACACATGTTGGCTGCTGTGTCCTGCAGTTGGA 2200
        2210        2220        2230        2240
CCAGTGTCCAGGGGTACAGGCTTCAGGCTGTGACCCACAC 2240
TGGTACCCACCTCCCTTTCCTATTTTGCCTTAGGTTCATC 2280
CACGGTTCCCCTGTGGAGCAAGTGGGGGCCCACATAGCTG 2320
CTGTCCCTGCTGAGGGTTGGTAGCAATCACACCCTCATGT 2360
CAGCTGGGAGACACGCGCAGTCTCCCACTGACCCCCAATC 2400
        2410        2420        2430        2440
AACTGAAAATATTGTTTTGACTACTTTTTGTTTTTTTGTT 2440
TTTTTGTTTTTTTTTTTTTTTCGAGACAGAGTTTCTCTGTA 2480
TAGCCCTGGCTGTCCTGGAACTCACTTTGTAGACCAGGCT 2520
GGCCTCGAACTCAAAAATCCTCCTGACTCTGCCTCTGCTT 2560
CCCAAGTGCTGGGATTAAAGACGTGCGCCACCACCGCCTG 2600
```

Fig. 62B

6956250 "0550460

mmFATP1 full length.DNA

```
        2610        2620        2630        2640
GCTGTTTTGTATTTTTGTTTTGTTTTGACGATAGGGTCTC 2640
ACTGTGGAGGCCAAGCTGGCCTCAGACTCCCCACCCCATT 2680
GCCTCTGGGCACCATTCTATATTCTCAGACTGATGACAAT 2720
GCACTAGTGTCCCTAGGAGTCTTGAGTCTGCACTTTCCCC 2760
TCATAGCCTCAAGCTTCCAGAACTGACTCTGATCACTTGG 2800
        2810        2820        2830        2840
ATGTGGCTAGTGTTGGCTCTACCCACATGTGTCAATTCAG 2840
GGGTCCCCAGGCATAGTCTCTGGAAGCCCTCACCCGGAAA 2880
AAGCTTGGAGAGACCCAGGAAGGTTGTTGTGTTCTCTTGG 2920
GCACCCCCTGGTGGCAGTCCTGGGCATGCTTCCGCACTGT 2960
ACTGGTGCATATAGCCCAGACCTATGACATTTGAGGTCTA 3000
        3010        3020        3030        3040
CCCTTCTGGCTCCTGTGGTCCCCATTGAGATCCTTGGTGA 3040
CTCACCTCAGTCACCAAGCAGAGCCTCTGCCTGCCTTCAT 3080
CTTCAAGGTCATGAAGGATGTGGACAGAGCAGCTACAGGC 3120
TGCCAGCAGTCAACCACATGAGAGTGTTACTTCCTTGTTG 3160
GTTTTTAAAAAATAAATGTGCTGAGCCTCGAAAAAAAAAA 3200
        3210        3220        3230        3240
AAAAAAAAAAAAAAAAA 3217
```

Fig. 62C

6350504.0

mmFATP1 full length.protein

```
          10        20        30        40
MRAPGAGTASVASLALLWFLGLPWTWSAAAAFCVYVGGGG 40
WRFLRIVCKTARRDLFGLSVLIRVRLELRRHRRAGDTIPC 80
IFQAVARRQPERLALVDASSGICWTFAQLDTYSNAVANLF 120
RQLGFAPGDVVAVFLEGRPEFVGLWLGLAKAGVVAALLNV 160
NLRREPLAFCLGTSAAKALIYGGEMAAAVAEVSEQLGKSL 200
         210       220       230       240
LKFCSGDLGPESILPDTQLLDPMLAEAPTTPLAQAPGKGM 240
DDRLFYIYTSGTTGLPKAAIVVHSRYYRIAAFGHHSYSMR 280
AADVLYDCLPLYHSAGNIMGVGQCVIYGLTVVLRKKFSAS 320
RFWDDCVKYNCTVVDDIGEICRYLLRQPVRDVEQRHRVRL 360
AVGNGLRPAIWEEFTQRFGVPQIGEFYGATECNCSIANMD 400
         410       420       430       440
GKVGSCGFNSRILTHVYPIRLVKVNEDTMEPLRDSEGLCI 440
PCQPGEPGLLVGQINQQDPLRRFDGYVSDSATNKKIAHSV 480
FRKGDSAYLSGDVLVMDELGYMYFRDRSGDTFRWRGENVS 520
TTEVEAVLSRLLGQTDVAVYGVAVPGVEGKAGMAAIADPH 560
SQLDPNSMYQELQKVLASYARPIFLRLLPQVDTTGTFKIQ 600
         610       620       630       640
KTRLQREGFDPRQTSDRLFFLDLKSGTRYLPLDERVHARI 640
CAGDFSL 647
```

Fig. 63

mmFATP2 full length.DNA

```
        10        20        30        40
GGGCGGAGGCCGAGCCCAGTCGCCAGCTCCTGCTCTGCTC 40
CTCTCCCGCCTGCCGCCGCGCTGCACGCCTCGAGCACTCC 80
CTCGGCCCCGGCGGGGACCGGGGACCCCGCAGCTACCGCC 120
ATGCTGCCAGTGCTCTACACCGGCCTGGCGGGGCTGCTGC 160
TGCTGCCTCTGCTGCTCACCTGCTGCTGCCCCTACCTCCT 200
       210       220       230       240
CCAAGATGTGCGGTACTTCCTGCGGCTGGCCAACATGGCC 240
CGGCGGGTGCGCAGCTACCGGCAGCGGCGACCCGTGCGTA 280
CCATCCTGCGGGCCTTCCTGGAACAAGCGCGCAAGACCCC 320
ACACAAGCCCTTCCTGCTGTTCCGAGACGAGACGCTCACC 360
TACGCCCAGGTGGACCGGCGCAGCAACCAAGTGGCGCGGG 400
       410       420       430       440
CGCTGCACGATCAACTGGGCCTACGACAGGGGGATTGCGT 440
AGCCCTCTTCATGGGCAATGAGCCGGCCTACGTGTGGATC 480
TGGCTGGGACTGCTCAAACTGGGCTGTCCCATGGCGTGCC 520
TCAACTACAACATTCGTGCCAAGTCTCTGCTGCACTGCTT 560
TCAATGCTGCGGGGCGAAGGTGCTGCTGGCCTCCCCAGAT 600
       610       620       630       640
CTACAAGAAGCTGTGGAGGAGGTTCTTCCAACCCTGAAAA 640
AGGATGCCGTGTCCGTCTTTTACGTAAGCAGAACTTCTAA 680
CACAAATGGTGTGGACACAATACTGGACAAAGTAGACGGA 720
GTGTCGGCGGAACCCACCCCGGAGTCGTGGAGGTCTGAAG 760
TCACTTTTACCACGCCAGCAGTATACATTTATACTTCGGG 800
       810       820       830       840
AACCACAGGTCTTCCAAAAAGCGGAACCATCAATCATCAT 840
CGCCTAAGGTATGGGACAAGCCTTGCTATGTCGAGTGGGA 880
ATCACGGCCAAGGATGTCATCTATACCAACAATGCCCCTG 920
TTCCAACAGTGCAACGCTCAAGATCGGCCTTCACGGATGC 960
ATCCTGGGTTGGGGCTACTTTAACCTTGGCGGGGCAAATT 1000
      1010      1020      1030      1040
CTCAAGCAAGCCAATTTTGGGAACGACTGGCAGGAAATAC 1040
AACGTCAACGGTCATTCAGTACATTGGTGAACTGCTTCGG 1080
TACCTGTGCAACACACCGCAGAAACCAAATGACCGGGACC 1120
ACAAAGTGAAAAAAGCCCTGGGAAATGGCTTACGAGGAGA 1160
TGTGTGGAGAGAGTTCATCAAGAGATTTGGGGACATCCAC 1200
```

Fig. 64A

```
        1210        1220        1230        1240
GTGTATGAGTTCTACGCATCCACTGAAGGCAACATTGGAT 1240
TTGTGAACTATCCAAGGAAAATCGGTGCTGTCGGGAGAGC 1280
AAACTACCTACAAAGAAAAGTTGCAAGGTATGAGCTGATC 1320
AAGTATGACGTGGAGAAGGACGAGCCGGTCCGTGACGCAA 1360
ATGGATATTGCATCAAAGTCCCCAAAGGTGAGGTTGGACT 1400
        1410        1420        1430        1440
CTTGGTTTGCAAAATCACACAGCTCACACCATTTATTGGC 1440
TATGCTGGAGGAAAGACCCAGACAGAGAAGAAAAAACTCA 1480
GAGATGTCTTTAAGAAAGGCGACATCTACTTCAACAGCGG 1520
AGACCTCCTGATGATCGACCGTGAGAACTTCGTCTACTTT 1560
CACGACAGGGTTGGAGATACTTTCCGGTGGAAAGGAGAGA 1600
        1610        1620        1630        1640
ACGTAGCTACCACAGAAGTCGCTGACATCGTGGGACTGGT 1640
AGATTTTGTTGAAGAAGTGAATGTGTATGGCGTGCCTGTG 1680
CCAGGTCATGAGGGTCGAATTGGGATGGCCTCCCTCAAGA 1720
TCAAAGAAAACTACGAGTTCAATGGAAAGAAACTCTTTCA 1760
ACACATCGCGGAGTACCTGCCCAGTTACGCGAGGCCTCGG 1800
        1810        1820        1830        1840
TTCCTGAGGATACAAGATACCATTGAGATCACTGGGACTT 1840
TTAAACACCGCAAAGTGACCCTGATGGAAGAGGGCTTCAA 1880
TCCCACAGTCATCAAAGATACCTTGTATTTCATGGATGAT 1920
GCAGAGAAAACATTTGTGCCCATGACTGAGAACATTTATA 1960
ATGCCATAATTGATAAAACTCTGAAGCTCTGAATATTCCC 2000
        2010        2020        2030        2040
TGGTGGTTTAGCTCATGACATTTCCAGAAAGAAACTCGAT 2040
AGACCTCGCAGAGCCACTTCATACGTAGAATCCAACTTTA 2080
ACTTGATTGAAGACTATAAGGTGCGATTTTATTTTTAGGA 2120
AATTATTCATTAAAAGGATAGTTTTTTTTTTTTTTTTTAA 2160
TTACACCTGAACCTTTGCAAGTAAAAAGATTTAGAGACAA 2200
        2210        2220        2230        2240
TTATTTTTCAATGTGCACCTGCCATTTGTCCTTGCAAACT 2240
AAGCTTCTTGGAGAGAGGGCCTTATTTTTTTAAAGACATA 2280
ATAAACTATATTAACACTAAAAAAAAAAAAAAAAAAAAAA 2320
AAAAAAAAAAAAAAAAAA 2338
```

Fig. 64B

6936504.0

mmFATP2 full length.protein

...

```
           10        20        30        40
MLPVLYTGLAGLLLLPLLLTCCCPYLLQDVRYFLRLANMA 40
RRVRSYRQRRPVRTILRAFLEQARKTPHKPFLLFRDETLT 80
YAQVDRRSNQVARALHDQLGLRQGDCVALFMGNEPAYVWI 120
WLGLLKLGCPMACLNYNIRAKSLLHCFQCCGAKVLLASPD 160
LQEAVEEVLPTLKKDAVSVFYVSRTSNTNGVDTILDKVDG 200
          210       220       230       240
VSAEPTPESWRSEVTFTTPAVYIYTSGTTGLPKSGTINHH 240
RLRYGTSLAMSSGNHGQGCHLYQQCPCSNSATLKIGLHGC 280
ILGWGYFNLGGANSQASQFWERLAGNTTSTVIQYIGELLR 320
YLCNTPQKPNDRDHKVKKALGNGLRGDVWREFIKRFGDIH 360
VYEFYASTEGNIGFVNYPRKIGAVGRANYLQRKVARYELI 400
          410       420       430       440
KYDVEKDEPVRDANGYCIKVPKGEVGLLVCKITQLTPFIG 440
YAGGKTQTEKKKLRDVFKKGDIYFNSGDLLMIDRENFVYF 480
HDRVGDTFRWKGENVATTEVADIVGLVDFVEEVNVYGVPV 520
PGHEGRIGMASLKIKENYEFNGKKLFQHIAEYLPSYARPR 560
FLRIQDTIEITGTFKHRKVTLMEEGFNPTVIKDTLYFMDD 600
          610       620       630       640
AEKTFVPMTENIYNAIIDKTLKL. 624
```

Fig. 65

```
         10        20        30        40
GAAAGCTCTGAGAGCGGGTGCAGTCTGGCCTGGCGTCTCG 40
CGTACCTGGCCCGGGAGCAGCCGACACACACCTTCCTCAT 80
CCACGGCGCGCAGCGCTTTAGCTACGCGGAGGCTGAGCGC 120
GAGAGCAACCGGATTGCTCGCGCCTTTCTGCGCGCACGGG 160
GCTGGACCGGGGGCCGCCGAGGCTCGGGCAGGGGCAGCAC 200
        210       220       230       240
TGAGGAAGGCGCACGCGTGGCGCCTCCGGCTGGAGATGCG 240
GCTGCTAGAGGGACGACCGCGCCCCCTCTGGCACCCGGGG 280
CGACCGTGGCGCTGCTCCTCCCAGCGGGCCCGGATTTCCT 320
TTGGATTTGGTTCGGACTGGCCAAAGCTGGCCTGCGCACG 360
GCCTTTGTGCCCACCGCTTTACGCCGAGGACCCCTGCTGC 400
        410       420       430       440
ACTGCCTCCGCAGCTGCGGTGCGAGTGCGCTCGTGCTGGC 440
CACAGAGTTCCTGGAGTCCCTGGAGCCGGACCTGCCGGCC 480
TTGAGAGCCATGGGGCTCCACCTATGGGCGACGGGCCCTG 520
AAACTAATGTAGCTGGAATCAGCAATTTGCTATCGGAAGC 560
AGCAGACCAAGTGGATGAGCCAGTGCCGGGGTACCTCTCT 600
        610       620       630       640
GCCCCCCAGAACATAATGGACACCTGCCTGTACATCTTCA 640
CCTCTGGCACTACTGGCCTGCCCAAGGCTGCTCGAATCAG 680
TCATCTGAAGGTTCTACAGTGCCAGGGATTCTACCATCTG 720
TGTGGAGTCCACCAGGAGGACGTGATCTACCTCGCACTCC 760
CACTGTACCACATGTCTGGCTCCCTTCTGGGCATTGTGGG 800
        810       820       830       840
CTGCTTGGGCATTGGGGCCACCGTGGTGCTGAAACCCAAG 840
TTCTCAGCTAGCCAGTTCTGGGACGATTGCCAGAAACACA 880
GGGTGACAGTGTTCCAGTACATTGGGGAGTTGTGCCGATA 920
CCTCGTCAACCAGCCCCCGAGCAAGGCAGAGTTTGACCAT 960
AAGGTGCGCTTGGCAGTGGGCAGTGGGTTGCGCCCAGACA 1000
       1010      1020      1030      1040
CCTGGGAGCGTTTCCTGCGGCGATTTGGACCTCTGCAGAT 1040
ACTGGAGACGTATGGCATGACAGAGGGCAACGTAGCTACG 1080
TTCAATTACACAGGACGGCAGGGTGCAGTGGGGCGAGCTT 1120
CCTGGCTTTACAAGCACATCTTCCCCTTCTCCTTGATTCG 1160
ATACGATGTCATGACAGGGGAGCCTATTCGGAATGCCCAG 1200
```

Fig. 66A

mmFATP3 partial.DNA

```
        1210        1220        1230        1240
GGGCACTGCATGACCACATCTCCAGGTGAGCCAGGCCTAC 1240
TGGTGGCCCCAGTGAGCCAGCAGTCCCCCTTCCTGGGCTA 1280
TGCTGGGGCTCCGGAGCTGGCCAAGGACAAGCTGCTGAAG 1320
GATGTCTTCTGGTCTGGGGACGTTTTCTTCAATACTGGGG 1360
ACCTCTTGGTCTGTGATGAGCAAGGCTTTCTTCACTTCCA 1400
        1410        1420        1430        1440
CGATCGTACTGGAGACACCATCAGGTGGAAGGGAGAGAAT 1440
GTGGCCACAACTGAAGTGGCTGAGGTCTTGGAGACCCTGG 1480
ACTTCCTTCAGGAGGTGAACATCTATGGAGTCACGGTGCC 1520
AGGGCACGAAGGCAGGGCAGGCATGGCGGCCTTGGCTCTG 1560
CGGCCCCCGCAGGCTCTGAACCTGGTGCAGCTCTACAGCC 1600
        1610        1620        1630        1640
ATGTTTCTGAGAACTTGCCACCGTATGCCCGACCTCGGTT 1640
TCTCAGGCTCCAGGAATCTTTGGCCACTACTGAGACCTTC 1680
AAACAGCAGAAGGTTAGGATGGCCAATGAGGGCTTTGACC 1720
CCAGTGTACTGTCTGACCCACTCTATGTTCTGGACCAAGA 1760
TATAGGGGCCTACCTGCCCCTCACACCTGCCCGGTACAGT 1800
        1810        1820        1830        1840
GCCCTCCTGTCTGGAGACCTTCGAATCTGAAACCTTCCAC 1840
TTGAGGGAGGGGCTCGGAGGGTACAGGCCACCATGGCTGC 1880
ACCAGGGAGGGTTTTCGGGTATCTTTTGTATATGGAGTCA 1920
TTATTTTGTAATAAACAGCTGGAGCTTAAAAAAAAAAAAA 1960
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 1998
```

Fig. 66B

5,635,404

mmFATP3 partial.protein

```
          10        20        30        40
          |         |         |         |
ESSESGCSLAWRLAYLAREQPTHTFLIHGAQRFSYAEAER 40
ESNRIARAFLRARGWTGGRRGSGRGSTEEGARVAPPAGDA 80
AARGTTAPPLAPGATVALLLPAGPDFLWIWFGLAKAGLRT 120
AFVPTALRRGPLLHCLRSCGASALVLATEFLESLEPDLPA 160
LRAMGLHLWATGPETNVAGISNLLSEAADQVDEPVPGYLS 200
        210       220       230       240
        |         |         |         |
APQNIMDTCLYIFTSGTTGLPKAARISHLKVLQCQGFYHL 240
CGVHQEDVIYLALPLYHMSGSLLGIVGCLGIGATVVLKPK 280
FSASQFWDDCQKHRVTVFQYIGELCRYLVNQPPSKAEFDH 320
KVRLAVGSGLRPDTWERFLRRFGPLQILETYGMTEGNVAT 360
FNYTGRQGAVGRASWLYKHIFPFSLIRYDVMTGEPIRNAQ: 400
        410       420       430       440
        |         |         |         |
GHCMTTSPGEPGLLVAPVSQQSPFLGYAGAPELAKDKLLK 440
DVFWSGDVFFNTGDLLVCDEQGFLHFHDRTGDTIRWKGEN 480
VATTEVAEVLETLDFLQEVNIYGVTVPGHEGRAGMAALAL 520
RPPQALNLVQLYSHVSENLPPYARPRFLRLQESLATTETF 560
KQQKVRMANEGFDPSVLSDPLYVLDQDIGAYLPLTPARYS 600
        610       620       630       640
        |         |         |         |
ALLSGDLRI. 610
```

Fig. 67

09405504.030303

mmFATP4 full length.DNA

```
        10        20        30        40
ATGCTGCTTGGAGCCTCTCTGGTGGGGGCGCTACTGTTCT 40
CCAAGCTAGTGCTGAAGCTGCCCTGGACCCAGGTGGGATT 80
CTCCCTGTTGCTCCTGTACTTGGGGTCTGGTGGCTGGCGT 120
TTCATCCGGGTCTTCATCAAGACGGTCAGGAGAGATATCT 160
TTGGTGGCATGGTGCTCCTGAAGGTGAAGACCAAGGTGCG 200
       210       220       230       240
ACGGTACCTTCAGGAGCGGAAGACGGTGCCCCTGCTGTTT 240
GCTTCAATGGTACAGCGCCACCCGGACAAGACAGCCCTGA 280
TTTTCGAGGGCACAGACACTCACTGGACCTTCCGCCAGCT 320
GGATGAGTACTCCAGTAGTGTGGCCAACTTCCTGCAGGCC 360
CGGGGCCTGGCCTCAGGCAATGTAGTTGCCCTCTTTATGG 400
       410       420       430       440
AAAACCGCAATGAGTTTGTGGGTCTGTGGCTAGGCATGGC 440
CAAGCTGGGCGTGGAGGCGGCTCTCATCAACACCAACCTT 480
AGGCGGGATGCCCTGCGCCACTGTCTTGACACCTCAAAGG 520
CACGAGCTCTCATCTTTGGCAGTGAGATGGCCTCAGCTAT 560
CTGTGAGATCCATGCTAGCCTGGAGCCCACACTCAGCCTC 600
       610       620       630       640
TTCTGCTCTGGATCCTGGGAGCCCAGCACAGTGCCCGTCA 640
GCACAGAGCATCTGGACCCTCTTCTGGAAGATGCCCCGAA 680
GCACCTGCCCAGTCACCCAGACAAGGGTTTTACAGATAAG 720
CTCTTCTACATCTACACATCGGGCACCACGGGGCTACCCA 760
AAGCTGCCATTGTGGTGCACAGCAGGTATTATCGTATGGC 800
       810       820       830       840
TTCCCTGGTGTACTATGGATTCCGCATGCGGCCTGATGAC 840
ATTGTCTATGACTGCCTCCCCCTCTACCACTCAAGCAGGA 880
AACATCGTGGGGATTGGCAGTGCTTACTCCACGGCATGAC 920
TGTGGTGATCCGGAAGAAGTTCTCAGCCTCCCGGTTCTGG 960
GATGATTGTATCAAGTACAACTGCACAGTGGTACAGTACA 1000
      1010      1020      1030      1040
TTGGCGAGCTCTGCCGCTACCTCCTGAACCAGCCACCCCG 1040
TGAGGCTGAGTCTCGGCACAAGGTGCGCATGGCACTGGGC 1080
AACGGTCTCCGGCAGTCCATCTGGACCGACTTCTCCAGCC 1120
GTTTCCACATCCCCCAGGTGGCTGAGTTCTATGGGGCCAC 1160
TGAATGCAACTGTAGCCTGGGCAACTTTGACAGCCGGGTG 1200
```

Fig. 68A

```
        1210      1220      1230      1240
GGGGCCTGTGGCTTCAATAGCCGCATCCTGTCCTTTGTGT 1240
ACCCTATCCGTTTGGTACGTGTCAATGAGGATACCATGGA 1280
ACTGATCCGGGGACCCGATGGAGTCTGCATTCCCTGTCAA 1320
CCAGGTCAGCCAGGCCAGCTGGTGGGTCGCATCATCCAGC 1360
AGGACCCTCTGCGCCGTTTCGACGGGTACCTCAACCAGGG 1400
        1410      1420      1430      1440
TGCCAACAACAAGAAGATTGCTAATGATGTCTTCAAGAAG 1440
GGGGACCAAGCCTACCTCACTGGTGACGTCCTGGTGATGG 1480
ATGAGCTGGGTTACCTGTACTTCCGAGATCGCACTGGGGA 1520
CACGTTCCGCTGGAAAGGGGAGAATGTATCTACCACTGAG 1560
GTGGAGGGCACACTCAGCCGCCTGCTTCATATGGCAGATG 1600
        1610      1620      1630      1640
TGGCAGTTTATGGTGTTGAGGTGCCAGGAACTGAAGGCCG 1640
AGCAGGAATGGCTGCCGTTGCAAGTCCCATCAGCAACTGT 1680
GACCTGGAGAGCTTTGCACAGACCTTGAAAAAGGAGCTGC 1720
CTCTGTATGCCCGCCCCATCTTCCTGCGCTTCTTGCCTGA 1760
GCTGCACAAGACAGGGACCTTCAAGTTCCAGAAGACAGAG 1800
        1810      1820      1830      1840
TTGCGGAAGGAGGGCTTTGACCCATCTGTTGTGAAAGACC 1840
CGCTGTTCTATCTGGATGCTCGGAAGGGCTGCTACGTTGC 1880
ACTGGACCAGGAGGCCTATACCCGCATCCAGGCAGGCGAG 1920
GAGAAGCTGTGATTTCCCCCTACATCCCTCTGAGGGCCAG 1960
AAGATGCTGGATTCAGAGCCCTAGCGTCCACCCCAGAGGG 2000
        2010      2020      2030      2040
TCCTGGGCAATGCCAGACCAAAGCTAGCAGGGCCCGCACC 2040
TCCGCCCCTAGGTGCTGATCTCCCCTCTCCCAAACTGCCA 2080
AGTGACTCACTGCCGCTTCCCCGACCCTCCAGAGGCTTTC 2120
TGTGAAAGTCTCATCCAAGCTGTGTCTTCTGGTCCAGGCG 2160
TGGCCCCTGGCCCCAGGGTTTCTGATAGGCTCCTTTAGGA 2200
        2210      2220      2230      2240
TGGTATCTTGGGTCCAGCGGGCCAGGGTGTGGGAGAGGAG 2240
TCACTAAGATCCCTCCAATCAGAAGGGAGCTTACAAAGGA 2280
ACCAAGGCAAAGCCTGTAGACTCAGGAAGCTAAGTGGCCA 2320
GAGACTATAGTGGCCAGTCATCCCATGTCCACAGAGGATC 2360
TTGGTCCAGAGCTGCCAAAGTGTCACCTCTCCCTGCCTGC 2400
        2410      2420      2430      2440
ACCTCTGGGGAAAAGAGGACAGCATGTGGCCACTGGGCAC 2440
CTGTCTCAAGAAGTCAGGATCACACACTCAGTCCTTGTTT 2480
CTCCAGGTTCCCTTGTTCTTGTCTCGGGGAGGGAGGGACG 2520
AGTGTCCTGTCTGTCCTTCCTGCCTGTCTGTGAGTCTGTG 2560
TTGCTTCTCCATCTGTCCTAGCCTGAGTGTGGGTGGAACA 2600
```

Fig. 68B

mmFATP4 full length.DNA

2610 2620 2630 2640

GGCATGAGGAGAGTGTGGCTCAGGGGCCAATAAACTCTGC 2640
CTTGACTCCTCTTAAAAAAAAAAAAAAAAAAAAAAAAAAA 2680
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 2710

Fig. 68C

6662660 "+0550+60

mmFATP4 full length.protein

```
         10        20        30        40
MLLGASLVGALLFSKLVLKLPWTQVGFSLLLLYLGSGGWR 40
FIRVFIKTVRRDIFGGMVLLKVKTKVRRYLQERKTVPLLF 80
ASMVQRHPDKTALIFEGTDTHWTFRQLDEYSSSVANFLQA 120
RGLASGNVVALFMENRNEFVGLWLGMAKLGVEAALINTNL 160
RRDALRHCLDTSKARALIFGSEMASAICEIHASLEPTLSL 200
        210       220       230       240
FCSGSWEPSTVPVSTEHLDPLLEDAPKHLPSHPDKGFTDK 240
LFYIYTSGTTGLPKAAIVVHSRYYRMASLVYYGFRMRPDD 280
IVYDCLPLYHSSRKHRGDWQCLLHGMTVVIRKKFSASRFW 320
DDCIKYNCTVVQYIGELCRYLLNQPPREAESRHKVRMALG 360
NGLRQSIWTDFSSRFHIPQVAEFYGATECNCSLGNFDSRV 400
        410       420       430       440
GACGFNSRILSFVYPIRLVRVNEDTMELIRGPDGVCIPCQ 440
PGQPGQLVGRIIQQDPLRRFDGYLNQGANNKKIANDVFKK 480
GDQAYLTGDVLVMDELGYLYFRDRTGDTFRWKGENVSTTE 520
VEGTLSRLLHMADVAVYGVEVPGTEGRAGMAAVASPISNC 560
DLESFAQTLKKELPLYARPIFLRFLPELHKTGTFKFQKTE 600
        610       620       630       640
LRKEGFDPSVVKDPLFYLDARKGCYVALDQEAYTRIQAGE 640
EKL. 644
```

Fig. 69

mmFATP5 full length.DNA

```
          10        20        30        40
CACTCATCAGAGCTAAGAGAGACTACACGCTCTCATCTAC 40
TTCAGAAAGAGCCAATGCCATGGGTATTTGGAAGAAACTA 80
ACCTTACTGCTGTTGCTGCTTCTGCTGGTTGGCCTGGGGC 120
AGCCCCCATGGCCAGCAGCTATGGCTCTGGCCCTGCGTTG 160
GTTCCTGGGAGACCCCACATGCCTTGTGCTGCTTGGCTTG 200
         210       220       230       240
GCATTGCTGGGCAGACCCTGGATCAGCTCCTGGATGCCCC 240
ACTGGCTGAGCCTGGTAGGAGCAGCTCTTACCTTATTCCT 280
ATTGCCTCTACAGCCACCCCCAGGGCTACGCTGGCTGCAT 320
AAAGATGTGGCTTTCACCTTCAAGATGCTTTTCTATGGCC 360
TAAAGTTCAGGCGACGCCTTAACAAACATCCTCCAGAGAC 400
         410       420       430       440
CTTTGTGGATGCTTTAGAGCGGCAAGCACTGGCATGGCCT 440
GACCGGGTGGCCTTGGTGTGTACTGGGTCTGAGGGCTCCT 480
CAATCACAAATAGCCAGCTGGATGCCAGGTCCTGTCAGGC 520
AGCATGGGTCCTGAAAGCAAAGCTGAAGGATGCCGTAATC 560
CAGAACACAAGAGATGCTGCTGCTATCTTAGTTCTCCCGT 600
         610       620       630       640
CCAAGACCATTTCTGCTTTGAGTGTGTTTCTGGGGTTGGC 640
CAAGTTGGGCTGCCCTGTGGCCTGGATCAATCCACACAGC 680
CGAGGGATGCCCTTGCTACACTCTGTACGGAGCTCTGGGG 720
CCAGTGTGCTGATTGTGGATCCAGACCTCCAGGAGAACCT 760
GGAAGAAGTCCTTCCCAAGCTGCTAGCTGAGAACATTCAC 800
         810       820       830       840
TGCTTCTACCTTGGCCACAGCTCACCCACCCCGGGAGTAG 840
AGGCTCTGGGAGCTTCCCTGGATGCTGCACCTTCTGACCC 880
AGTACCTGCCAGCCTTCGAGCTACGATTAAGTGGAAATCT 920
CCTGCCATATTCATCTTTACTTCAGGGACCACTGGACTCC 960
CAAAGCCAGCCATCTTATCACATGAGCGGGTCATACAAGT 1000
        1010      1020      1030      1040
GAGCAACGTGCTGTCCTTCTGTGGATGCAGAGCTGATGAT 1040
GTGGTCTATGACGTCCTACCTCTGTACCATACGATAGGGC 1080
TTGTCCTTGGATTCCTTGGCTGCTTACAAGTTGGAGCCAC 1120
CTGTGTCCTGGCCCCCAAGTTCTCTGCCTCCCGATTCTGG 1160
GCTGAGTGCCGGCAGCATGGCGTAACAGTGATCTTGTATG 1200
```

Fig. 70A

```
        1210        1220        1230        1240
TGGGTGAAATCCTGCGGTACTTGTGTAACGTCCCTGAGCA 1240
ACCAGAAGACAAGATACATACAGTGCGCTTGGCCATGGGA 1280
ACTGGACTTCGGGCAAATGTGTGGAAAAACTTCCAGCAAC 1320
GCTTTGGTCCCATTCGGATCTGGGAATTCTACGGATCCAC 1360
AGAGGGCAATGTGGGCTTAATGAACTATGTGGGCCACTGC 1400
        1410        1420        1430        1440
GGGGCTGTGGGAAGGACCAGCTGCATCCTTCGAATGCTGA 1440
CTCCCTTTGAGCTTGTACAGTTCGACATAGAGACAGCAGA 1480
GCCTCTGAGGGACAAACAGGGTTTTTGCATTCCTGTGGAG 1520
CCAGGAAAGCCAGGACTTCTTTTGACCAAGGTTCGAAAGA 1560
ACCAACCCTTCCTGGGCTACCGTGGTTCCCAGGCCGAGTC 1600
        1610        1620        1630        1640
CAATCGGAAACTTGTTGCGAATGTACGACGCGTAGGAGAC 1640
CTGTACTTCAACACTGGGGACGTGCTGACCTTGGACCAGG 1680
AAGGCTTCTTCTACTTTCAAGACCGCCTTGGTGACACCTT 1720
CCGGTGGAAGGGCGAAAACGTATCTACTGGAGAGGTGGAG 1760
TGTGTTTTGTCTAGCCTAGACTTCCTAGAGGAAGTCAATG 1800
        1810        1820        1830        1840
TCTATGGTGTGCCTGTGCCAGGGTGTGAGGGTAAGGTTGG 1840
CATGGCTGCTGTGAAACTGGCTCCTGGGAAGACTTTTGAT 1880
GGGCAGAAGCTATACCAGCATGTCCGCTCCTGGCTCCCTG 1920
CCTATGCCACACCTCATTTCATCCGTATCCAGGATTCCCT 1960
GGAGATCACAAACACCTACAAGCTGGTAAAGTCACGGCTG 2000
        2010        2020        2030        2040
GTGCGTGAGGGTTTTGATGTGGGGATCATTGCTGACCCCC 2040
TCTACATACTGGACAACAAGGCCCAGACCTTCCGGAGTCT 2080
GATGCCAGATGTGTACCAGGCTGTGTGTGAAGGAACCTGG 2120
AATCTCTGACCACCTAGCCAACTGGAAGGCAATCCAAAAG 2160
TGTAGAGATTGACACTAGTCAGCTTCACAAAGTTGTCCGG 2200
        2210        2220        2230        2240
GTTCCAGATGCCCATGGCCCAGTAGTACTTAGAGAATAAA 2240
CTTGAATGTGTATACAAAAAAAAAAAAAAAAAAAAAAA 2277
```

Fig. 70B

6636260.4050560

mmFATP5 full length.protein

```
         10        20        30        40
MGIWKKLTLLLLLLLLVGLGQPPWPAAMALALRWFLGDPT 40
CLVLLGLALLGRPWISSWMPHWLSLVGAALTLFLLPLQPP 80
PGLRWLHKDVAFTFKMLFYGLKFRRRLNKHPPETFVDALE 120
RQALAWPDRVALVCTGSEGSSITNSQLDARSCQAAWVLKA 160
KLKDAVIQNTRDAAAILVLPSKTISALSVFLGLAKLGCPV 200
        210       220       230       240
AWINPHSRGMPLLHSVRSSGASVLIVDPDLQENLEEVLPK 240
LLAENIHCFYLGHSSPTPGVEALGASLDAAPSDPVPASLR 280
ATIKWKSPAIFIFTSGTTGLPKPAILSHERVIQVSNVLSF 320
CGCRADDVVYDVLPLYHTIGLVLGFLGCLQVGATCVLAPK 360
FSASRFWAECRQHGVTVILYVGEILRYLCNVPEQPEDKIH 400
        410       420       430       440
TVRLAMGTGLRANVWKNFQQRFGPIRIWEFYGSTEGNVGL 440
MNYVGHCGAVGRTSCILRMLTPFELVQFDIETAEPLRDKQ 480
GFCIPVEPGKPGLLLTKVRKNQPFLGYRGSQAESNRKLVA 520
NVRRVGDLYFNTGDVLTLDQEGFFYFQDRLGDTFRWKGEN 560
VSTGEVECVLSSLDFLEEVNVYGVPVPGCEGKVGMAAVKL 600
        610       620       630       640
APGKTFDGQKLYQHVRSWLPAYATPHFIRIQDSLEITNTY 640
KLVKSRLVREGFDVGIIADPLYILDNKAQTFRSLMPDVYQ 680
AVCEGTWNL. 690
```

Fig. 71

69623604050460

dmFATP partial.DNA

1 10 20 30 40

GCTCTCTGGGCCTATATCAAGCTGCTGAGGTACACGAAGC 40
GCCATGAGCGGCTCAACTACACGGTGGCGGACGTCTTCGA 80
ACGAAATGTTCAGGCCCATCCGGACAAGGTGGCTGTGGTC 120
AGTGAGACGCAACGCTGGACCTTCCGTCAGGTGAACGAGC 160
ATGCGAACAAGGTGGCCAATGTGCTGCAGGCTCAGGGCTA 200

210 220 230 240

CAAAAAGGGCGATGTGGTGGCCCTGTTGCTGGAGAACCGC 240
GCCGAGTACGTGGCCACCTGGCTGGGTCTCTCCAAGATCG 280
GTGTGATCACACCGCTGATCAACACGAATCTGCGCGGTCC 320
CTCCCTGCTGCACAGCATCACGGTGGCCCATTGCTCGGCT 360
CTCATTTACGGCGAGGACTTCCTGGAAGCTGTCACCGACG 400

410 420 430 440

TGGCCAAGGATCTGCCAGCGAACCTCACACTCTTCCAGTT 440
CAACAACGAGAACAACAACAGCGAGACGGAAAAGAACATA 480
CCGCAGGCCAAGAATCTGAACGCGCTGCTGACCACGGCCA 520
GCTATGAGAAGCCTAACAAGACGCAGGTTAACCACCACGA 560
CAAGCTGGTCTACATCTACACCTCCGGCACCACAGGATTG 600

610 620 630 640

CCAAAGGCTGCGGTTATCTCTCACTCCCGTTATCTGTTTA 640
TCGCTGCTGGCATCCACTACACCATGGGTTTCCAGGAGGA 680
GGACATCTTCTACACGCCCTTGCCTTTGTACCACACCGCT 720
GGTGGCATTATGTGCATGGGTCAGTCGGTGCTCTTTGGCT 760
CCACGGTCTCCATTCGCAAGAAGTTCTCGGCATCCAACTA 800

810 820 830 840

TTTCGCCGACTGCGCCAAGTATAATGCAACTATTGGTCAG 840
TATATCGGTGAGATGGCTCGCTACATTCTAGCTACGAAAC 880
CCTCGGAATACGACCAGAAACACCGAGTGCGTCTGGTCTT 920
TGGAAACGGACTGCGACCGCAGATTTGGCCACAGTTTGTG 960
CAGCGCTTCAACATTGCCAAGGTTGGCGAGTTCTACGGCG 1000

1010 1020 1030 1040

CCACCGAGGGTAATGCGAACATCATGAATCATGACAACAC 1040
GGTGGGCGCCATCGGCTTTGTGTCGCGCATCCTGCCCAAG 1080
ATCTACCCAATCTCGATCATTCGCGCCGATCCGGACACCG 1120
GAGAGCCCATTAGAGATAGGAATGGCCTATGCCAACTGTG 1160
CGCTCCCAACGAGCCAGGCGTATTCATCGGCAAGATCGTC 1200

Fig. 72A

dmFATP partial.DNA

1210 1220 1230 1240

AAAGGAAATCCTTCTCGCGAATTCCTCGGATACGTCGATG 1240
AAAAGGCCTCCGCGAAGAAGATTGTTAAGGATGTGTTCAA 1280
GCATGGCGATATGGCTTTCATCTCCGGAGATCTGCTGGTT 1320
GCCGACGAGAAGGGTTATCTGTACTTCAAGGATCGCACCG 1360
GTGACACCTTCCGCTGGAAGGGCGAGAATGTTTCCACCAG 1400

1410 1420 1430 1440

CGAGGTGGAGGCGCAAGTCAGCAATGTGGCCGGTTACAAG 1440
GATACCGTCGTTTACGGCGTAACCATTCCGCACACCGAGG 1480
GAAGGGCCGGCATGGCCGCCATCTATGATCCGGAGCGAGA 1520
ATTGGACCTCGACGTCTTCGCCGCTAGCTTGGCCAAGGTG 1560
CTGCCCGCGTACGCTCGTCCCCAGATCATTCGATTGCTCA 1600

1610 1620 1630 1640

CCAAGGTGGACCTGACTGGAACCTTTAAGCTGCGCAAGGT 1640
AGACCTGCAGAAGGAGGGCTACGATCCGAACGCGATCAAG 1680
GACGCGCTGTACTACCAGACTTCCAAGGGTCGGTACGAGC 1720
TGCTCACGCCCCAGGTTTACGACCAGGTGCAGCGCAACGA 1760
AATCCGCTTCTAAGAGCTGCAATAGAGTTGTGTCTGAACC 1800

1810 1820 1830 1840

TTGCCTTTTGCCCAATATGCTGTTAATTAGTTTGTAAGGC 1840
TAAGTGTAGTAGAGGAAAATCGGGGAAATCGGCAGCAAA 1880
GATCATTCAGCCTAGGAGAGATGCATCCGAAGCACATTTC 1920
CATGTCAACAATGCACTTTTGTATATCGTAAGCATATATA 1960
TATCGTATATCGTAAACGTAGTTGTATCTGCATTTGTGTA 2000

2010 2020 2030 2040

GATGATAGCCTCCTATACGCATTTCAATTGTTTTTAGCGT 2040
GCTAAAGAACCTTGTTAAATGCAATTTCAGCTATTGTTTA 2080
GTCAGTTTTAGTGGCATTTACACTTCCATTCTCGTTGCGT 2120
TTCGTTTTTGCCTGTACATATGAGAAGCTCTGATGTTTTT 2160
GTATCAAATAAAGTTTTTTCCTTCACCACGGACCACGTGA 2200

2210 2220 2230 2240

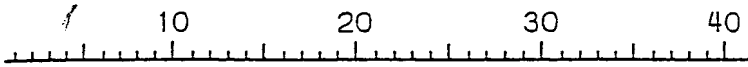
AAAAAAAAAAAAAAAAAAAAA 2221

Fig. 72B

dmFATP partial.protein

```
          10        20        30        40
ALWAYIKLLRYTKRHERLNYTVADVFERNVQAHPDKVAVV 40
SETQRWTFRQVNEHANKVANVLQAQGYKKGDVVALLLENR 80
AEYVATWLGLSKIGVITPLINTNLRGPSLLHSITVAHCSA 120
LIYGEDFLEAVTDVAKDLPANLTLFQFNNENNNSETEKNI 160
PQAKNLNALLTTASYEKPNKTQVNHHDKLVYIYTSGTTGL 200
          210       220       230       240
PKAAVISHSRYLFIAAGIHYTMGFQEEDIFYTPLPLYHTA 240
GGIMCMGQSVLFGSTVSIRKKFSASNYFADCAKYNATIGQ 280
YIGEMARYILATKPSEYDQKHRVRLVFGNGLRPQIWPQFV 320
QRFNIAKVGEFYGATEGNANIMNHDNTVGAIGFVSRILPK 360
IYPISIIRADPDTGEPIRDRNGLCQLCAPNEPGVFIGKIV 400
          410       420       430       440
KGNPSREFLGYVDEKASAKKIVKDVFKHGDMAFISGDLLV 440
ADEKGYLYFKDRTGDTFRWKGENVSTSEVEAQVSNVAGYK 480
DTVVYGVTIPHTEGRAGMAAIYDPERELDLDVFAASLAKV 520
LPAYARPQIIRLLTKVDLTGTFKLRKVDLQKEGYDPNAIK 560
DALYYQTSKGRYELLTPQVYDQVQRNEIRF 590
```

Fig. 73

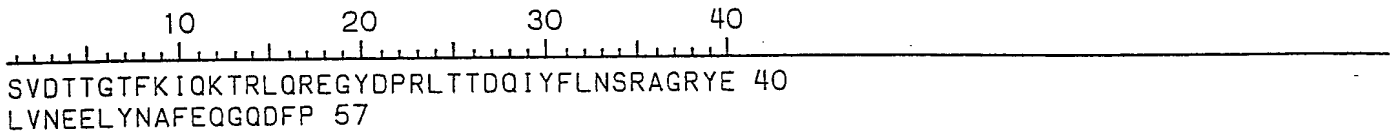



```
AGTGTAGATACCACAGGAACGTTTAAAATCCAGAAGACCA 40
GACTGCAAAGGGAAGGATACGATCCACGGCTCACAACTGA 80
CCAGATCTACTTCCTAAACTCCAGAGCAGGGCGTTACGAG 120
CTTGTCAACGAGGAGCTGTACAATGCATTTGAACAAGGGC 160
AGGATTTCCCTTT 173
```

Fig. 74

09350450

drFATP partial.protein



SVDTTGTFKIQKTRLQREGYDPRLTTDQIYFLNSRAGRYE 40
LVNEELYNAFEQGQDFP 57

Fig. 75

6656050 +0554460

ceFATPa coding only.DNA

```
         10        20        30        40
ATGAAGCTGGAGGAGCTTGTGACAGTTATGCTTCTCACAG 40
TGGCTGTCATTGCTCAGAATCTTCCGATTGGAGTAATATT 80
GGCTGGAGTTCTTATTTTATACATCACAGTGGTTCATGGA 120
GATTTCATTTATAGAAGTTATCTTACGTTGAATAGGGATT 160
TAACAGGATTGGCTCTAATTATTGAAGTCAAAATCGACCT 200
        210       220       230       240
ATGGTGGAGGTTGCATCAGAATAAAGGAATCCATGAACTG 240
TTTTTGGATATTGTGAAAAAGAATCCAAATAAGCCGGCGA 280
TGATTGACATCGAGACGAATACAACAGAAACATACGCAGA 320
GTTCAATGCACATTGTAATAGATATGCCAATTATTTCCAG 360
GGTCTTGGCTATCGATCCGGAGACGTTGTCGCCTTGTACA 400
        410       420       430       440
TGGAGAACTCGGTCGAGTTTGTGGCCGCGTGGATGGGACT 440
CGCAAAAATCGGAGTTGTAACGGCTTGGATCAACTCGAAT 480
TTGAAAAGAGAGCAACTTGTTCATTGTATCACTGCGAGCA 520
AGACAAAGGCGATTATCACAAGTGTAACACTTCAGAATAT 560
TATGCTTGATGCTATCGATCAGAAGCTGTTTGATGTTGAG 600
        610       620       630       640
GGAATTGAGGTTTACTCTGTCGGAGAGCCCAAGAAGAATT 640
CTGGATTCAAGAATCTCAAGAAGAAGTTGGATGCTCAAAT 680
TACTACGGAACCAAAGACCCTTGACATAGTAGATTTTAAA 720
AGTATTCTTTGCTTCATCTATACAAGTGGTACTACTGGAA 760
TGCCAAAAGCCGCTGTCATGAAGCACTTCAGATATTACTC 800
        810       820       830       840
GATTGCCGTTGGAGCCGCAAAATCATTCGGAATCCGCCCT 840
TCTGATCGTATGTACGTCTCGATGCCAATTTATCACACTG 880
CAGCTGGAATTCTTGGAGTTGGGCAAGCTCTGTTGGGTGG 920
ATCATCGTGTGTCATTAGAAAAAAATTCTCGGCTAGCAAC 960
TTTTGGAGGGATTGTGTAAAGTATGATTGTACAGTTTCAC 1000
       1010      1020      1030      1040
AATACATTGGAGAGATTTGTCGGTACTTGTTGGCTCAGCC 1040
AGTTGTGGAAGAGGAATCCAGGCATAGAATGAGATTGTTG 1080
GTTGGAAACGGACTCCGTGCTGAAATCTGGCAACCATTTG 1120
TAGATCGATTCCGTGTCAGAATTGGAGAACTTTATGGTTC 1160
AACTGAAGGAACTTCATCTCTCGTGAACATTGACGGACAT 1200
```

Fig. 76A

ceFATPa coding only.DNA

```
        1210        1220        1230        1240
GTCGGAGCTTGCGGATTCTTGCCAATATCCCCATTAACAA 1240
AGAAAATGCATCCGGTTCGATTAATTAAGGTTGATGATGT 1280
CACTGGAGAAGCAATCCGAACTTCCGATGGACTTTGCATT 1320
GCATGTAATCCAGGAGAGTCTGGAGCAATGGTGTCGACGA 1360
TCAGAAAAAAATAATCCATTATTGCAATTCGAGGGATATCT 1400
        1410        1420        1430        1440
GAATAAGAAGGAAACGAATAAAAAGATTATCAGAGATGTC 1440
TTCGCAAAGGGAGATAGTTGCTTTTTGACTGGAGATCTTC 1480
TTCATTGGGATCGTCTTGGTTATGTATATTTCAAGGATCG 1520
TACTGGAGATACTTTCCGTTGGAAGGGAGAGAATGTGTCG 1560
ACTACTGAAGTCGAGGCAATTCTTCATCCAATTACTGGAT 1600
        1610        1620        1630        1640
TGTCTGATGCAACTGTTTATGGTGTAGAGGTTCCTCAAAG 1640
AGAGGGAAGAGTTGGAATGGCGTCAGTTGTTCGAGTTGTA 1680
TCGCATGAGGAAGATGAAACTCAATTTGTTCATAGAGTTG 1720
GAGCAAGACTTGCCTCTTCGCTTACCAGCTACGCGATTCC 1760
TCAGTTTATGCGAATTTGTCAGGATGTTGAGAAAACAGGT 1800
        1810        1820        1830        1840
ACATTCAAACTTGTGAAGACGAATCTACAACGATTAGGTA 1840
TCATGGATGCTCCTTCAGATTCAATTTACATCTACAATTC 1880
TGAAAATCGCAATTTTGTGCCGTTCGACAATGATTTGAGG 1920
TGCAAGGTCTCACTGGGAAGTTATCCATTTTAA 1953
```

Fig. 76B

6622650 "40550460

ceFATPa coding only.protein

...

```
          10        20        30        40
MKLEELVTVMLLTVAVIAQNLPIGVILAGVLILYITVVHG 40
DFIYRSYLTLNRDLTGLALIIEVKIDLWWRLHQNKGIHEL 80
FLDIVKKNPNKPAMIDIETNTTETYAEFNAHCNRYANYFQ 120
GLGYRSGDVVALYMENSVEFVAAWMGLAKIGVVTAWINSN 160
LKREQLVHCITASKTKAIITSVTLQNIMLDAIDQKLFDVE 200
         210       220       230       240
GIEVYSVGEPKKNSGFKNLKKKLDAQITTEPKTLDIVDFK 240
SILCFIYTSGTTGMPKAAVMKHFRYYSIAVGAAKSFGIRP 280
SDRMYVSMPIYHTAAGILGVGQALLGGSSCVIRKKFSASN 320
FWRDCVKYDCTVSQYIGEICRYLLAQPVVEEESRHRMRLL 360
VGNGLRAEIWQPFVDRFRVRIGELYGSTEGTSSLVNIDGH 400
         410       420       430       440
VGACGFLPISPLTKKMHPVRLIKVDDVTGEAIRTSDGLCI 440
ACNPGESGAMVSTIRKNNPLLQFEGYLNKKETNKKIIRDV 480
FAKGDSCFLTGDLLHWDRLGYVYFKDRTGDTFRWKGENVS 520
TTEVEAILHPITGLSDATVYGVEVPQREGRVGMASVVRVV 560
SHEEDETQFVHRVGARLASSLTSYAIPQFMRICQDVEKTG 600
         610       620       630       640
TFKLVKTNLQRLGIMDAPSDSIYIYNSENRNFVPFDNDLR 640
CKVSLGSYPF. 651
```

Fig. 77

ceFATPb coding only.DNA

```
        10        20        30        40
ATGAGGGAAATGCCGGACAGTCCCAAGTTTGCGTTAGTCA 40
CGTTTGTTGTGTATGCAGTGGTTTTGTACAATGTCAACAG 80
CGTTTTCTGGAAATTTGTATTCATCGGATATGTTGTATTT 120
AGGCTGCTTCGCACTGATTTTGGAAGAAGAGCACTTGCCA 160
CGTTACCTAGAGATTTTGCGGGACTGAAGCTCTTAATATC 200
       210       220       230       240
GGTTAAGTCGACAATTCGTGGCTTGTTCAAGAAAGATCGC 240
CCAATTCATGAAATCTTTTTGAATCAGGTGAAACAGCATC 280
CAAACAAAGTGGCGATTATTGAAATTGAAAGTGGTAGGCA 320
GTTGACGTATCAAGAATTGAATGCGTTAGCTAATCAGTAT 360
GCTAACCTTTACGTGAGTGAAGGTTACAAAATGGGCGACG 400
       410       420       430       440
TTGTCGCTTTGTTTATGGAAAATAGCATCGACTTCTTTGC 440
AATTTGGCTGGGACTTTCCAAGATTGGAGTCGTGTCGGCG 480
TTCATCAACTCAAACTTGAAGTTGGAGCCATTGGCACATT 520
CGATTAATGTTTCGAAGTGCAAATCATGCATTACCAATAT 560
CAATCTGTTGCCGATGTTCAAAGCCGCTCGTGAAAAGAAT 600
       610       620       630       640
CTGATCAGTGACGAGATCCACGTGTTTCTGGCTGGAACTC 640
AGGTTGATGGACGTCATAGAAGTCTTCAGCAAGATCTCCA 680
TCTTTTCTCTGAGGATGAACCTCCAGTTATAGACGGACTC 720
AATTTTAGAAGCGTTCTGTGTTATATTTACACTTCCGGTA 760
CTACCGGAAATCCAAAGCCAGCCGTCATTAAACACTTCCG 800
       810       820       830       840
TTACTTCTGGATTGCGATGGGAGCAGGAAAAGCATTTGGA 840
ATTAATAAGTCAGACGTTGTGTACATTACGATGCCAATGT 880
ATCACTCTGCCGCCGGTATCATGGGTATTGGATCATTAAT 920
TGCATTCGGGTCGACCGCTGTTATTAGGAAAAAGTTTTCG 960
GCAAGCAACTTCTGGAAAGATTGCGTCAAGTACAACGTCA 1000
      1010      1020      1030      1040
CAGCGACACAGTACATTGGAGAAATCTGCAGGTATCTTCT 1040
GGCAGCGAATCCATGTCCTGAAGAGAAACAACACAACGTG 1080
CGATTGATGTGGGGAAATGGTTTGAGAGGACAAATTTGGA 1120
AAGAGTTTGTAGGAAGATTTGGAATTAAGAAAATTGGAGA 1160
GTTGTACGGCTCAACAGAAGGAAACTCCAATATTGTTAAC 1200
```

Fig. 78A

ceFATPb coding only.DNA

```
       1210      1220      1230      1240
GTGGATAACCATGTTGGAGCTTGTGGATTCATGCCAATTT 1240
ATCCCCATATTGGATCCCTCTACCCAGTTCGACTTATTAA 1280
GGTTGATAGAGCCACTGGAGAGCTTGAACGTGATAAGAAC 1320
GGACTCTGTGTGCCGTGTGTGCCTGGTGAAACTGGGGAAA 1360
TGGTTGGCGTTATCAAGGAGAAAGATATTCTTCTAAAGTT 1400
       1410      1420      1430      1440
CGAAGGATATGTCAGCGAAGGGGATACTGCAAAGAAAATC 1440
TACAGAGATGTGTTCAAGCATGGAGATAAGGTGTTTGCAA 1480
GTGGAGATATTCTTCATTGGGATGATCTTGGATACTTGTA 1520
CTTTGTGGACCGTTGTGGAGACACTTTCCGTTGGAAAGGG 1560
GAGAACGTGTCAACTACTGAAGTTGAGGGAATTCTTCAGC 1600
       1610      1620      1630      1640
CTGTGATGGATGTGGAAGATGCAACTGTTTATGGAGTCAC 1640
TGTCGGTAAAATGGAGGGGCGTGCCGGAATGGCTGGTATT 1680
GTCGTCAAGGATGGAACGGATGTTGAGAAATTCATCGCCG 1720
ATATTACTTCTCGACTGACCGAAAATCTGGCGTCTTACGC 1760
AATCCCTGTTTTCATTCGGCTGTGCAAGGAAGTTGATCGA 1800
       1810      1820      1830      1840
ACCGGAACCTTCAAACTCAAGAAGACTGATCTTCAAAAAC 1840
AAGGTTACGACCTGGTTGCTTGTAAAGGAGACCCAATTTA 1880
CTACTGGTCAGCTGCAGAAAAATCCTACAAACCACTGACT 1920
GACAAAATGCAACAGGATATTGACACTGGTGTTTATGATC 1960
GCATTTAA 1968
```

Fig. 78B

ceFATPb coding only.protein

```
        10        20        30        40
MREMPDSPKFALVTFVVYAVVLYNVNSVFWKFVFIGYVVF 40
RLLRTDFGRRALATLPRDFAGLKLLISVKSTIRGLFKKDR 80
PIHEIFLNQVKQHPNKVAIIEIESGRQLTYQELNALANQY 120
ANLYVSEGYKMGDVVALFMENSIDFFAIWLGLSKIGVVSA 160
FINSNLKLEPLAHSINVSKCKSCITNINLLPMFKAAREKN 200
       210       220       230       240
LISDEIHVFLAGTQVDGRHRSLQQDLHLFSEDEPPVIDGL 240
NFRSVLCYIYTSGTTGNPKPAVIKHFRYFWIAMGAGKAFG 280
INKSDVVYITMPMYHSAAGIMGIGSLIAFGSTAVIRKKFS 320
ASNFWKDCVKYNVTATQYIGEICRYLLAANPCPEEKQHNV 360
RLMWGNGLRGQIWKEFVGRFGIKKIGELYGSTEGNSNIVN 400
       410       420       430       440
VDNHVGACGFMPIYPHIGSLYPVRLIKVDRATGELERDKN 440
GLCVPCVPGETGEMVGVIKEKDILLKFEGYVSEGDTAKKI 480
YRDVFKHGDKVFASGDILHWDDLGYLYFVDRCGDTFRWKG 520
ENVSTTEVEGILQPVMDVEDATVYGVTVGKMEGRAGMAGI 560
VVKDGTDVEKFIADITSRLTENLASYAIPVFIRLCKEVDR 600
       610       620       630       640
TGTFKLKKTDLQKQGYDLVACKGDPIYYWSAAEKSYKPLT 640
DKMQQDIDTGVYDRI. 656
```

Fig. 79

```
1        10        20        30        40
ATGGCGTGTATGCATCAGGCTCAGCTATACAATGATCTAG 40
AGGAATTGCTAACTGGTCCATCAGTACCCATCGTTGCTGG 80
AGCTGCTGGAGCTGCAGCTCTCACTGCCTACATTAACGCC 120
AAATACCACATAGCCCATGATCTCAAGACCCTCGGTGGTG 160
GATTGACACAATCGTCCGAAGCGATTGATTTCATAAACCG 200
         210       220       230       240
CCGCGTCGCACAAAAGCGCGTCCTCACGCACCACATCTTC 240
CAGGAGCAGGTCCAAAAACAATCAAATCATCCCTTTCTTA 280
TCTTTGAGGGCAAGACATGGTCTTACAAGGAGTTCTCTGA 320
GGCATACACGAGGGTCGCGAACTGGCTGATTGATGAGCTG 360
GACGTACAAGTAGGGGAGATGGTCGCAATTGATGGCGGAA 400
         410       420       430       440
ATAGTGCAGAGCACCTGATGCTTTGGCTTGCACTTGATGC 440
AATCGGTGCGGCTACGAGTTTTTTGAACTGGAACCTGACA 480
GGGGCAGGGTTAATTCATTGCATAAAGCTATGCGAATGTC 520
GATTCGTTATCGCAGACATCGATATTAAAGCGAACATTGA 560
ACCGTGCCGTGGCGAACTGGAGGAGACGGGCATCAACATT 600
         610       620       630       640
CACTACTATGACCCATCCTTCATCTCATCGCTACCGAATA 640
ACACGCCAATTCCCGACAGCCGCACTGAGAACATTGAATT 680
AGATTCAGTACGAGGACTGATATACACATCTGGAACCACT 720
GGTCTACCTAAAGGCGTGTTTATAAGCACTGGCCGCGAGC 760
TTAGGACTGACTGGTCGATTTCAAAGTATCTAAATCTCAA 800
         810       820       830       840
GCCCACGGATCGAATGTATACATGTATGCCGCTCTACCAT 840
GCCGCTGCACACAGCCTCTGTACAGCATCAGTTATTCATG 880
GTGGAGGTACCGTGGTATTGAGCAGGAAATTCTCACACAA 920
GAAGTTCTGGCCTGAAGTTGTGGCTTCGGAAGCAAATATC 960
ATTCAGTACGTTGGTGAATTAGGTCGATATCTCCTGAATG 1000
        1010      1020      1030      1040
GTCCAAAGAGTCCTTACGACAGGGCCCATAAAGTCCAGAT 1040
GGCGTGGGGCAATGGCATGCGTCCAGACGTGTGGGAAGCG 1080
TTTCGTGAACGCTTCAACATACCAATTATTCATGAGCTCT 1120
ATGCCGCAACCGATGGGCTCGGGTCAATGACCAATCGTAA 1160
CGCGGGCCCTTTTACAGCAAACTGTATTGCGCTGCGAGGG 1200
```

Fig. 80A

chFATP coding only.DNA

1210 1220 1230 1240

CTGATCTGGCACTGGAAATTTCGAAATCAGGAAGTGCTGG 1240
TCAAGATGGATCTCGATACTGATGAGATCATGAGAGATCG 1280
CAATGGGTTTGCGATACGATGCGCTGTCAATGAACCTGGA 1320
CAGATGCTTTTTCGGCTGACACCCGAAACTCTGGCTGGTG 1360
CACCAAGCTACTACAACAACGAAACGGCCACACAGAGCAG 1400

1410 1420 1430 1440

GCGGATTACAGATGTGTTTCAAAAGGGTGACCTGTGGTTC 1440
AAGTCCGGTGACATGCTACGGCAAGACGCCGAAGGCCGCG 1480
TCTACTTTGTCGATCGACTAGGCGATACGTTCCGCTGGAA 1520
ATCCGAAAACGTTTCTACCAATGAAGTCGCGGACGTGATG 1560
GGCACATTTCCTCAGATTGCTGAAACGAATGTATACGGTG 1600

1610 1620 1630 1640

TCCTTGTGCCGGGTAACGATGGTCGAGTGCGCAGCCTCAA 1640
TTGTCATGGCAGACGGCGTGACAGAGTCGACATTCGCTTC 1680
GCTGCCCTTGCAAAGCACGCCCGAGATCGGTTACCGGGTT 1720
ATGCTGTACCACTGTTTCTGAGGGTAACTCCAGCACTTGA 1760
ATATACGGGCACATTAAAGATTCAGAAAGGACGCCTCAAG 1800

1810 1820 1830 1840

CAGGAAGGTATAGACCCAGATAAGATTTCCGGCGAAGATA 1840
AGTTATACTGGCTGCCGCCTGGTAGCGATATATATTTACC 1880
ATTTGGAAAGATGGAGTGGCAGGGAATTGTAGATAAGCGT 1920
ATACGGCTGTGA 1932

Fig. 80B

chFATP coding only.protein

```
          10        20        30        40
MACMHQAQLYNDLEELLTGPSVPIVAGAAGAAALTAYINA 40
KYHIAHDLKTLGGGLTQSSEAIDFINRRVAQKRVLTHHIF 80
QEQVQKQSNHPFLIFEGKTWSYKEFSEAYTRVANWLIDEL 120
DVQVGEMVAIDGGNSAEHLMLWLALDAIGAATSFLNWNLT 160
GAGLIHCIKLCECRFVIADIDIKANIEPCRGELEETGINI 200
         210       220       230       240
HYYDPSFISSLPNNTPIPDSRTENIELDSVRGLIYTSGTT 240
GLPKGVFISTGRELRTDWSISKYLNLKPTDRMYTCMPLYH 280
AAAHSLCTASVIHGGGTVVLSRKFSHKKFWPEVVASEANI 320
IQYVGELGRYLLNGPKSPYDRAHKVQMAWGNGMRPDVWEA 360
FRERFNIPIIHELYAATDGLGSMTNRNAGPFTANCIALRG 400
         410       420       430       440
LIWHWKFRNQEVLVKMDLDTDEIMRDRNGFAIRCAVNEPG 440
QMLFRLTPETLAGAPSYYNNETATQSRRITDVFQKGDLWF 480
KSGDMLRQDAEGRVYFVDRLGDTFRWKSENVSTNEVADVM 520
GTFPQIAETNVYGVLVPGNDGRVRSLNCHGRRRDRVDIRF 560
AALAKHARDRLPGYAVPLFLRVTPALEYTGTLKIQKGRLK 600
         610       620       630       640
QEGIDPDKISGEDKLYWLPPGSDIYLPFGKMEWQGIVDKR 640
IRL 643
```

Fig. 81

```
          10         20         30         40
          |          |          |          |
CTTTACCATTCATCAGCTTCATTCTGCATTTTTAGCTTGA 40
CGGCAGCCGGGTCTACGCTGATCATCGGCCGCAAGTTCTC 80
CGCGAGAAACTTCATAAAGGAAGCGCGCGAGAACGACGCC 120
ACGGTCATCCAGTACGTGGGTGAGACCTTGCGATATCTGC 160
TCGCCACCCCCGGTGAAACCGATCCAGTTACTGGCGAAGA 200
        210        220        230        240
        |          |          |          |
CCTGGACAAAAAGCACAATATTCGAGCAGTATACGGCAAC 240
GGGCTACGGCCGGATATCTGGAACCGCTTCAAGGAGCGCT 280
TCAACGTGCCGACGGTTGCCGAATTTTATGCTGCAACCGA 320
GAGCCCAGGCGGAACATGGAACTATTCAACAAATGACTTC 360
ACTGCCGGAGCCATTGGGCACACTGGCGTGCTTAGTGGAT 400
        410        420        430        440
        |          |          |          |
GGCTTCTTGGACGCGGCCTTACTATTGTCGAGGTGGACCA 440
GGAATCACAGGAACCATGGCGCGATCCCCAAACCGGGTTC 480
TGCAAGCCGGTCCCGCGAGGCGAAGCAGGCGAGCTCCTGT 520
ATGCCATTGATCCGGCCGACCCGGGCGAGACCTTCCAGGG 560
CTACTACCGCAACTCCTTTAGAGCACACTGGCGGCCG 597
```

Fig. 82

0940550 - 090390

aspergillus partial.protein

10 20 30 40

```
LYHSSASFCIFSLTAAGSTLIIGRKFSARNFIKEARENDA 40
TVIQYVGETLRYLLATPGETDPVTGEDLDKKHNIRAVYGN 80
GLRPDIWNRFKERFNVPTVAEFYAATESPGGTWNYSTNDF 120
TAGAIGHTGVLSGWLLGRGLTIVEVDQESQEPWRDPQTGF 160
CKPVPRGEAGELLYAIDPADPGETFQGYYRNSFRAHWRP 199
```

Fig. 83

```
        10        20        30        40
GCAAAGGCCGACGCGTGGCTGCGGACGGGTAACGTGATCA 40
GGGCGGACAACGAAGGGCGACTCTTCTTCCACGACCGGAT 80
CGGAGACACGTTCCGATGGAAGGGAGAGACNGTCAGCACA 120
CAAGAGGTCAGTTTGGTGCTCGGACGACACGACTCAATCA 160
AGGAGGCCAACGTGTACGGCGTGACGGTGCCGAACCACGA 200
       210       220       230       240
CGGGCGGGCCGGCTGCGCTGCGCTCACGCTATCAGACGCT 240
CTGGCGACTGAAAAGAAGCTGGGCGATGAGCTGCTAAAGG 280
GATTGGCTACTCACTCGTCGACTTCGCTTCCCAAGTTTGC 320
GGTGCCGCAGTTCCTACGGGTGGTGCGCGGCGAGATGCAG 360
TCAACGGGCACCAACAAGCAACAGAAGCACGACCTGAGGG 400
       410       420       430       440
TGCAGGGTGTAGAGCCGGGCAAGGTGGGCGTAGACGAGGT 440
GTACTGGTTGCGGGGAGGGACATATGTACCATTCGGAACA 480
GAGGATTGGGATGGGTTGAAGAAGGGTCTTGTGAAGTTGT 520
GA 522
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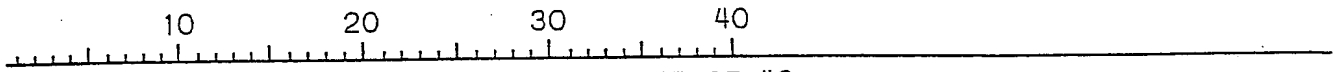
Fig. 84

09254 " 047660

mgFATP partial.protein



AKADAWLRTGNVIRADNEGRLFFHDRIGDTFRWKGETVST 40
QEVSLVLGRHDSIKEANVYGVTVPNHDGRAGCAALTLSDA 80
LATEKKLGDELLKGLATHSSTSLPKFAVPQFLRVVRGEMQ 120
STGTNKQQKHDLRVQGVEPGKVGVDEVYWLRGGTYVPFGT 160
EDWDGLKKGLVKL 173

Fig. 85

6556260.050601

```
        10        20        30        40
ATGTCTCCCATACAGGTTGTTGTCTTTGCCTTGTCAAGGA 40
TTTTCCTGCTATTATTCAGACTTATCAAGCTAATTATAAC 80
CCCTATCCAGAAATCACTGGGTTATCTATTTGGTAATTAT 120
TTTGATGAATTAGACCGTAAATATAGATACAAGGAGGATT 160
GGTATATTATTCCTTACTTTTTGAAAAGCGTGTTTTGTTA 200
       210       220       230       240
TATCATTGATGTGAGAAGACATAGGTTTCAAAACTGGTAC 240
TTATTTATTAAACAGGTCCAACAAAATGGTGACCATTTAG 280
CGATTAGTTACACCCGTCCCATGGCCGAAAAGGGAGAATT 320
TCAACTCGAAACCTTTACGTATATTGAAACTTATAACATA 360
GTGTTGAGATTGTCTCATATTTTGCATTTTGATTATAACG 400
       410       420       430       440
TTCAGGCCGGTGACTACGTGGCAATCGATTGTACTAATAA 440
ACCTCTTTTCGTATTTTTATGGCTTTCTTTGTGGAACATT 480
GGGGCTATTCCAGCTTTTTTAAACTATAATACTAAAGGCA 520
CTCCGCTGGTTCACTCCCTAAAGATTTCCAATATTACGCA 560
GGTATTTATTGACCCTGATGCCAGTAATCCGATCAGAGAA 600
       610       620       630       640
TCGGAAGAAGAAATCAAAAACGCACTTCCTGATGTTAAAT 640
TAAACTATCTTGAAGAACAAGACTTAATGCATGAACTTTT 680
AAATTCGCAATCACCGGAATTCTTACAACAAGACAACGTT 720
AGGACACCACTAGGCTTGACCGATTTTAAACCCTCTATGT 760
TAATTTATACATCTGGAACCACTGGTTTGCCTAAATCCGC 800
       810       820       830       840
TATTATGTCTTGGAGAAAATCCTCCGTAGGTTGTCAAGTT 840
TTTGGTCATGTTTTACATATGACTAATGAAAGCACTGTGT 880
TCACAGCCATGCCATTGTTCCATTCAACTGCTGCCTTATT 920
AGGTGCGTGCGCCATTCTATCTCACGGTGGTTGCCTTGCG 960
TTATCGCATAAATTTTCTGCCAGTACATTTTGGAAGCAAG 1000
      1010      1020      1030      1040
TTTATTTAACAGGAGCCACGCACATCCAATATGTCGGAGA 1040
AGTCTGTAGATACCTGTTACATACGCCAATTTCTAAGTAT 1080
GAAAAGATGCATAAGGTGAAGGTTGCTTATGGTAACGGGC 1120
TGAGACCTGACATCTGGCAGGACTTCAGGAAGAGGTTCAA 1160
CATAGAAGTTATTGGTGAATTCTATGCCGCAACTGAAGCT 1200
```

Fig. 86A

scFATP coding only.DNA

```
        1210      1220      1230      1240
CCTTTTGCTACAACTACCTTCCAGAAAGGTGACTTTGGAA 1240
TTGGCGCATGTAGGAACTATGGTACTATAATTCAATGGTT 1280
TTTGTCATTCCAACAAACATTGGTAAGGATGGACCCAAAT 1320
GACGATTCCGTTATATATAGAAATTCCAAGGGTTTCTGCG 1360
AAGTGGCCCCTGTTGGCGAACCAGGAGAAATGTTAATGAG 1400
        1410      1420      1430      1440
AATCTTTTTCCCTAAAAAACCAGAAACATCTTTTCAAGGT 1440
TATCTTGGTAATGCCAAGGAAACAAAGTCCAAAGTTGTGA 1480
GGGATGTCTTCAGACGTGGCGATGCTTGGTATAGATGTGG 1520
AGATTTATTAAAAGCGGACGAATATGGATTATGGTATTTC 1560
CTTGATAGAATGGGTGATACTTTCAGATGGAAATCTGAAA 1600
        1610      1620      1630      1640
ATGTTTCCACTACTGAAGTAGAAGATCAGTTGACGGCCAG 1640
TAACAAAGAACAATATGCACAAGTTCTAGTTGTTGGTATT 1680
AAAGTACCTAAATATGAAGGTAGAGCTGGTTTTGCAGTTA 1720
TTAAACTAACTGACAACTCTCTTGACATCACTGCAAAGAC 1760
CAAATTATTAAATGATTCCTTGAGCCGGTTAAATCTACCG 1800
        1810      1820      1830      1840
TCTTATGCTATGCCCCTATTTGTTAAATTTGTTGATGAAA 1840
TTAAAATGACAGATAACCTCATAAAATTTTGA 1872
```

Fig. 86B

09592399 . 040502

scFATP coding only.protein

```
          10        20        30        40
          |         |         |         |
MSPIQVVVFALSRIFLLLFRLIKLIITPIQKSLGYLFGNY 40
FDELDRKYRYKEDWYIIPYFLKSVFCYIIDVRRHRFQNWY 80
LFIKQVQQNGDHLAISYTRPMAEKGEFQLETFTYIETYNI 120
VLRLSHILHFDYNVQAGDYVAIDCTNKPLFVFLWLSLWNI 160
GAIPAFLNYNTKGTPLVHSLKISNITQVFIDPDASNPIRE 200
          210       220       230       240
          |         |         |         |
SEEEIKNALPDVKLNYLEEQDLMHELLNSQSPEFLQQDNV 240
RTPLGLTDFKPSMLIYTSGTTGLPKSAIMSWRKSSVGCQV 280
FGHVLHMTNESTVFTAMPLFHSTAALLGACAILSHGGCLA 320
LSHKFSASTFWKQVYLTGATHIQYVGEVCRYLLHTPISKY 360
EKMHKVKVAYGNGLRPDIWQDFRKRFNIEVIGEFYAATEA 400
          410       420       430       440
          |         |         |         |
PFATTTFQKGDFGIGACRNYGTIIQWFLSFQQTLVRMDPN 440
DDSVIYRNSKGFCEVAPVGEPGEMLMRIFFPKKPETSFQG 480
YLGNAKETKSKVVRDVFRRGDAWYRCGDLLKADEYGLWYF 520
LDRMGDTFRWKSENVSTTEVEDQLTASNKEQYAQVLVVGI 560
KVPKYEGRAGFAVIKLTDNSLDITAKTKLLNDSLSRLNLP 600
          610       620       630       640
          |         |         |         |
SYAMPLFVKFVDEIKMTDNLIKF. 624
```

Fig. 87

Sequence Listing

mtFATP coding only.DNA

```
         10        20        30        40
GTGTCCGATTACTACGGCGGCGCACACACAACGGTCAGGC 40
TGATCGACCTGGCAACTCGGATGCCGCGAGTGTTGGCGGA 80
CACGCCGGTGATTGTGCGTGGGGCAATGACCGGGCTGCTG 120
GCCCGGCCGAATTCCAAGGCGTCGATCGGCACGGTGTTCC 160
AGGACCGGGCCGCTCGCTACGGTGACCGAGTCTTCCTGAA 200
        210       220       230       240
ATTCGGCGATCAGCAGCTGACCTACCGCGACGCTAACGCC 240
ACCGCCAACCGGTACGCCGCGGTGTTGGCCGCCCGCGGCG 280
TCGGCCCCGGCGACGTCGTTGGCATCATGTTGCGTAACTC 320
ACCCAGCACAGTCTTGGCGATGCTGGCCACGGTCAAGTGC 360
GGCGCTATCGCCGGCATGCTCAACTACCACCAGCGCGGCG 400
        410       420       430       440
AGGTGTTGGCGCACAGCCTGGGTCTGCTGGACGCGAAGGT 440
ACTGATCGCAGAGTCCGACTTGGTCAGCGCCGTCGCCGAA 480
TGCGGCGCCTCGCGCGGCCGGGTAGCGGGCGACGTGCTGA 520
CCGTCGAGGACGTGGAGCGATTCGCCACAACGGCGCCCGC 560
CACCAACCCGGCGTCGGCGTCGGCGGTGCAAGCCAAAGAC 600
        610       620       630       640
ACCGCGTTCTACATCTTCACCTCGGGCACCACCGGATTTC 640
CCAAGGCCAGTGTCATGACGCATCATCGGTGGCTGCGGGC 680
GCTGGCCGTCTTCGGAGGGATGGGGCTGCGGCTGAAGGGT 720
TCCGACACGCTCTACAGCTGCCTGCCGCTGTACCACAACA 760
ACGCGTTAACGGTCGCGGTGTCGTCGGTGATCAATTCTGG 800
        810       820       830       840
GGCGACCCTGGCGCTGGGTAAGTCGTTTTCGGCGTCGCGG 840
TTCTGGGATGAGGTGATTGCCAACCGGGCGACGGCGTTCG 880
TCTACATCGGCGAAATCTGCCGTTATCTGCTCAACCAGCC 920
GGCCAAGCCGACCGACCGTGCCCACCAGGTGCGGGTGATC 960
TGCGGTAACGGGCTGCGGCCGGAGATCTGGGATGAGTTCA 1000
       1010      1020      1030      1040
CCACCCGCTTCGGGGTCGCGCGGGTGTGCGAGTTCTACGC 1040
CGCCAGCGAAGGCAACTCGGCCTTTATCAACATCTTCAAC 1080
GTGCCCAGGACCGCCGGGGTATCGCCGATGCCGCTTGCCT 1120
TTGTGGAATACGACCTGGACACCGGCGATCCGCTGCGGGA 1160
TGCGAGCGGGCGAGTGCGTCGGGTACCCGACGGTGAACCC 1200
```

Fig. 88A

```
        1210        1220        1230        1240
GGCCTGTTGCTTAGCCGGGTCAACCGGCTGCAGCCGTTCG 1240
ACGGCTACACCGACCCGGTTGCCAGCGAAAAGAAGTTGGT 1280
GCGCAACGCTTTTCGAGATGGCGACTGTTGGTTCAACACC 1320
GGTGACGTGATGAGCCCGCAGGGCATGGGCCATGCCGCCT 1360
TCGTCGATCGGCTGGGCGACACCTTCCGCTGGAAGGGCGA 1400
        1410        1420        1430        1440
GAATGTCGCCACCACTCAGGTCGAAGCGGCACTGGCCTCC 1440
GACCAGACCGTCGAGGAGTGCACGGTCTACGGCGTCCAGA 1480
TTCCGCGCACCGGCGGGCGCGCCGGAATGGCCGCGATCAC 1520
ACTGCGCGCTGGCGCCGAATTCGACGGCCAGGCGCTGGCC 1560
CGAACGGTTTACGGTCACTTGCCCGGCTATGCACTTCCGC 1600
        1610        1620        1630        1640
TCTTTGTTCGGGTAGTGGGGTCGCTGGCGCACACCACGAC 1640
GTTCAAGAGTCGCAAGGTGGAGTTGCGCAACCAGGCCTAT 1680
GGCGCCGACATCGAGGATCCGCTGTACGTACTGGCCGGCC 1720
CGGACGAAGGATATGTGCCGTACTACGCCGAATACCCTGA 1760
GGAGGTTTCGCTCGGAAGGCGACCGCAGGGCTAG 1794
```

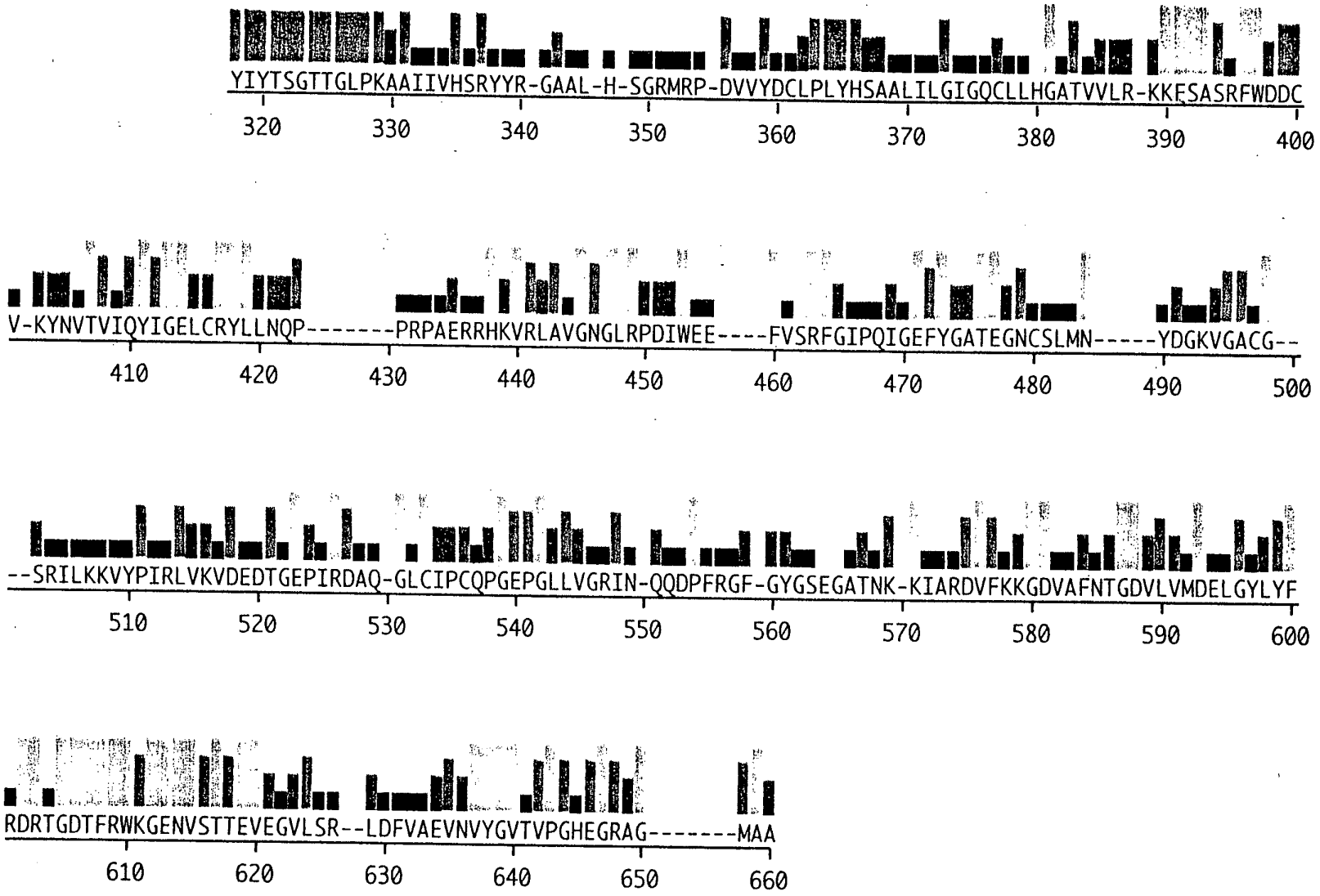
Fig. 88B

6,828,090 - 12/2004

mtFATP coding only.protein

```
         10        20        30        40
MSDYYGGAHTTVRLIDLATRMPRVLADTPVIVRGAMTGLL 40
ARPNSKASIGTVFQDRAARYGDRVFLKFGDQQLTYRDANA 80
TANRYAAVLAARGVGPGDVVGIMLRNSPSTVLAMLATVKC 120
GAIAGMLNYHQRGEVLAHSLGLLDAKVLIAESDLVSAVAE 160
CGASRGRVAGDVLTVEDVERFATTAPATNPASASAVQAKD 200
        210       220       230       240
TAFYIFTSGTTGFPKASVMTHHRWLRALAVFGGMGLRLKG 240
SDTLYSCLPLYHNNALTVAVSSVINSGATLALGKSFSASR 280
FWDEVIANRATAFVYIGEICRYLLNQPAKPTDRAHQVRVI 320
CGNGLRPEIWDEFTTRFGVARVCEFYAASEGNSAFINIFN 360
VPRTAGVSPMPLAFVEYDLDTGDPLRDASGRVRRVPDGEP 400
        410       420       430       440
GLLLSRVNRLQPFDGYTDPVASEKKLVRNAFRDGDCWFNT 440
GDVMSPQGMGHAAFVDRLGDTFRWKGENVATTQVEAALAS 480
DQTVEECTVYGVQIPRTGGRAGMAAITLRAGAEFDGQALA 520
RTVYGHLPGYALPLFVRVVGSLAHTTTFKSRKVELRNQAY 560
GADIEDPLYVLAGPDEGYVPYYAEYPEEVSLGRRPQG. 598
```

Fig. 89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V-KYNVTVIQYIGELCRYLLNQP-------PRPAERRHKVRLAVGNGLRPDIWEE----FVSRFGIPQIGEFYGATEGNCSLMN-----YDGKVGACG--
410 420 430 440 450 460 470 480 490 500
--SRILKKVYPIRLVKVDEDTGEPIRDAQ-GLCIPCQPGEPGLLVGRIN-QQDPFRGF-GYGSEGATNK-KIARDVFKKGDVAFNTGDVLVMDELGYLYF
510 520 530 540 550 560 570 580 590 600
RDRTGDTFRWKGENVSTTEVEGVLSR--LDFVAEVNVYGVTVPGHEGRAG-------MAA
610 620 630 640 650 660

Figure 90

66E260"nOSSOnGO

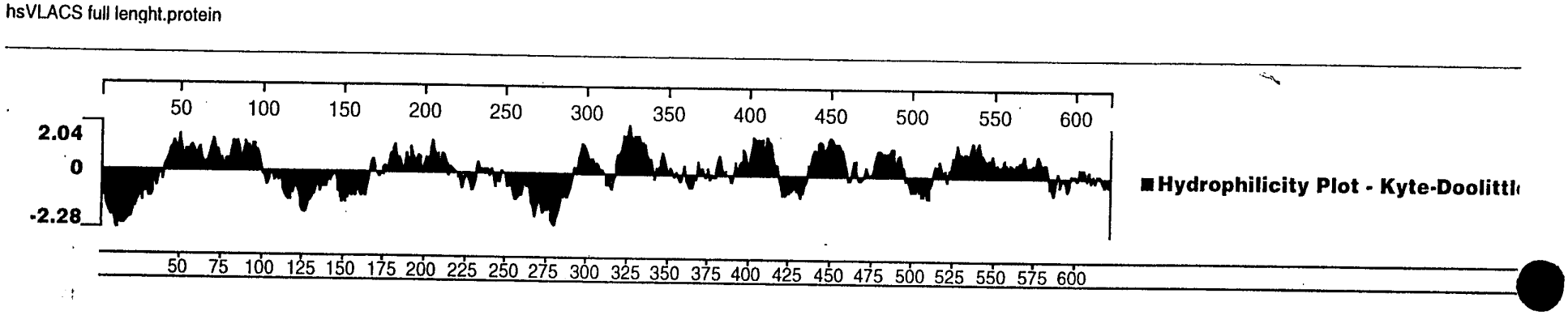

Figure 91

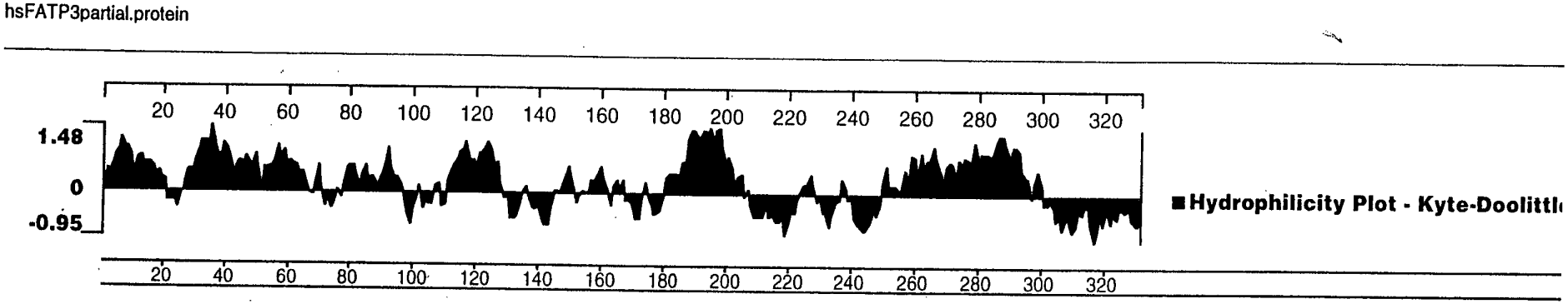
hsFATP3partial.protein
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320
1.48
0
-0.95
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320
Hydrophilicity Plot - Kyte-Doolittl

Figure 92

66E260 "h0550h60

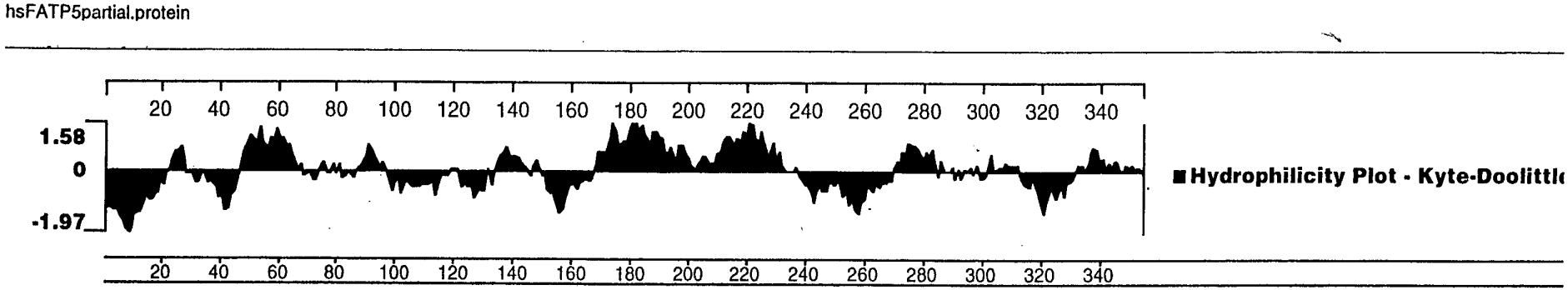

Figure 93

hsFATP3

```
1      cga ccc acg cgt ccg ggg atg ttt gcg agc ggc tgg aac cag acg gtg ccg ata gag gaa
1                          M   F   A   S   G   W   N   Q   T   V   P   I   E   E

61     gcg ggc tcc atg gct gcc ctc ctg ctg ctg ccc ctg ctg ctg ttg cta ccg ctg ctg ctg
15     A   G   S   M   A   A   L   L   L   L   P   L   L   L   L   L   P   L   L   L

121    ctg ctg aag cta cac ctc tgg ccg cag ttg cgc tgg ctt ccg gcg gac ttg gcc ttt gcg
35     L   L   K   L   H   L   W   P   Q   L   R   W   L   P   A   D   L   A   F   A

181    gtg cga gct ctg tgc tgc aaa agg gct ctt cga gct cgc gcc ctg gcc gcg gct gcc gcc
55     V   R   A   L   C   C   K   R   A   L   R   A   R   A   L   A   A   A   A   A

241    gac ccg gaa ggt ccc gag ggg ggc tgc agc ctg gcc tgg cgc ctc gcg gaa ctg gcc cag
75     D   P   E   G   P   E   G   G   C   S   L   A   W   R   L   A   E   L   A   Q

301    cag cgc gcc gcg cac acc ttt ctc att cac ggc tcg cgg cgc ttt agc tac tca gag gcg
95     Q   R   A   A   H   T   F   L   I   H   G   S   R   R   F   S   Y   S   E   A

361    gag cgc gag agt aac agg gct gca cgc gcc ttc cta cgt gcg cta ggc tgg gac tgg gga
115    E   R   E   S   N   R   A   A   R   A   F   L   R   A   L   G   W   D   W   G

421    ccc gac ggc ggc gac agc ggc gag ggg agc gct gga gaa ggc gag cgg gca gcg ccg gga
135    P   D   G   G   D   S   G   E   G   S   A   G   E   G   E   R   A   A   P   G

481    gcc gga gat gca gcg gcc gga agc ggc gcg gag ttt gcc gga ggg gac ggt gcc gcc aga
155    A   G   D   A   A   A   G   S   G   A   E   F   A   G   G   D   G   A   A   R

541    ggt gga gga gag ccc gcc gcc cct ctg tca cct gga gca act gtg gcg ctg ctc ctc ccc
175    G   G   G   E   P   A   A   P   L   S   P   G   A   T   V   A   L   L   L   P

601    gct ggc cca gag ttt ctg tgg ctc tgg ttc ggg ctg gcc aag gcc ggc ctg cgc act gcc
195    A   G   P   E   F   L   W   L   W   F   G   L   A   K   A   G   L   R   T   A

661    ttt gtg ccc acc gcc ctg cgc cgg ggc ccc ctg ctg cac tgc ctc cgc agc tgc ggc gcg
215    F   V   P   T   A   L   R   R   G   P   L   L   H   C   L   R   S   C   G   A

721    cgc gcg ctg gtg ctg gcg cca gag ttt ctg gag tcc ctg gag ccg gac ctg ccc gcc ctg
235    R   A   L   V   L   A   P   E   F   L   E   S   L   E   P   D   L   P   A   L

781    aga gcc atg ggg ctc cac ctg tgg gct gca ggc cca gga acc cac cct gct gga att agc
255    R   A   M   G   L   H   L   W   A   A   G   P   G   T   H   P   A   G   I   S

841    gat ttg ctg gct gaa gtg tcc gct gaa gtg gat ggg cca gtg cca gga tac ctc tct tcc
275    D   L   L   A   E   V   S   A   E   V   D   G   P   V   P   G   Y   L   S   S

901    ccc cag agc ata aca gac acg tgc ctg tac atc ttc acc tct ggc acc acg ggc ctc ccc
295    P   Q   S   I   T   D   T   C   L   Y   I   F   T   S   G   T   T   G   L   P

961    aag gct gct cgg atc agt cat ctg aag atc ctg caa tgc cag ggc ttc tat cag ctg tgt
315    K   A   A   R   I   S   H   L   K   I   L   Q   C   Q   G   F   Y   Q   L   C

1021   ggt gtc cac cag gaa gat gtg atc tac ctc gcc ctc cca ctc tac cac atg tcc ggt tcc
335    G   V   H   Q   E   D   V   I   Y   L   A   L   P   L   Y   H   M   S   G   S

1081   ctg ctg ggc atc gtg ggc tgc atg ggc att ggg gcc aca gtg gtg ctg aaa tcc aag ttc
355    L   L   G   I   V   G   C   M   G   I   G   A   T   V   V   L   K   S   K   F

1141   tcg gct ggt cag ttc tgg gaa gat tgc cag cag cac agg gtg acg gtg ttc cag tac att
375    S   A   G   Q   F   W   E   D   C   Q   Q   H   R   V   T   V   F   Q   Y   I

1201   ggg gag ctg tgc cga tac ctt gtc aac cag ccc ccg agc aag gca gaa cgt ggc cat aag
395    G   E   L   C   R   Y   L   V   N   Q   P   P   S   K   A   E   R   G   H   K
```

Figure 94A

```
1261  gtc cgg ctg gca gtg ggc agc ggg ctg cgc cca gat acc tgg gag cgt ttt gtg cgg cgc
415   V   R   L   A   V   G   S   G   L   R   P   D   T   W   E   R   F   V   R   R

1321  ttc ggg ccc ctg cag gtg ctg gag aca tat gga ctg aca gag ggc aac gtg gcc acc atc
435   F   G   P   L   Q   V   L   E   T   Y   G   L   T   E   G   N   V   A   T   I

1381  aac tac aca gga cag cgg ggc gct gtg ggg cgt gct tcc tgg ctt tac aag cat atc ttc
455   N   Y   T   G   Q   R   G   A   V   G   R   A   S   W   L   Y   K   H   I   F

1441  ccc ttc tcc ttg att cgc tat gat gtc acc aca gga gag cca att cgg gac ccc cag ggg
475   P   F   S   L   I   R   Y   D   V   T   T   G   E   P   I   R   D   P   Q   G

1501  cac tgt atg gcc aca tct cca ggt gag cca ggg ctg ctg gtg gcc ccg gta agc cag cag
495   H   C   M   A   T   S   P   G   E   P   G   L   L   V   A   P   V   S   Q   Q

1561  tcc cca ttc ctg ggc tat gct ggc ggg cca gag ctg gcc cag ggg aag ttg cta aag gat
515   S   P   F   L   G   Y   A   G   G   P   E   L   A   Q   G   K   L   L   K   D

1621  gtc ttc cgg cct ggg gat gtt ttc ttc aac act ggg gac ctg ctg gtc tgc gat gac caa
535   V   F   R   P   G   D   V   F   F   N   T   G   D   L   L   V   C   D   D   Q

1681  ggt ttt ctc cgc ttc cat gat cgt act gga gac acc ttc agg tgg aag ggg gag aat gtg
555   G   F   L   R   F   H   D   R   T   G   D   T   F   R   W   K   G   E   N   V

1741  gcc aca acc gag gtg gca gag gtc ttc gag gcc cta gat ttt ctt cag gag gtg aac gtc
575   A   T   T   E   V   A   E   V   F   E   A   L   D   F   L   Q   E   V   N   V

1801  tat gga gtc act gtg cca ggg cat gaa ggc agg gct gga atg gca gcc cta gtt ctg cgt
595   Y   G   V   T   V   P   G   H   E   G   R   A   G   M   A   A   L   V   L   R

1861  ccc ccc cac gct ttg gac ctt atg cag ctc tac acc cac gtg tct gag aac ttg cca cct
615   P   P   H   A   L   D   L   M   Q   L   Y   T   H   V   S   E   N   L   P   P

1921  tat gcc cgg ccc cga ttc ctc agg ctc cag gag tct ttg gcc acc aca gag acc ttc aaa
635   Y   A   R   P   R   F   L   R   L   Q   E   S   L   A   T   T   E   T   F   K

1981  cag cag aaa gtt cgg atg gca aat gag ggc ttc gac ccc agc acc ctg tct gac cca ctg
655   Q   Q   K   V   R   M   A   N   E   G   F   D   P   S   T   L   S   D   P   L

2041  tac gtt ctg gac cag gct gta ggt gcc tac ctg ccc ctc aca act gcc cgg tac agc gcc
675   Y   V   L   D   Q   A   V   G   A   Y   L   P   L   T   T   A   R   Y   S   A

2101  ctc ctg gca gga aac ctt cga atc tga gaa ctt cca cac ctg agg cac ctg aga gag gaa
695   L   L   A   G   N   L   R   I   *

2161  ctc tgt
```

Figure 94B

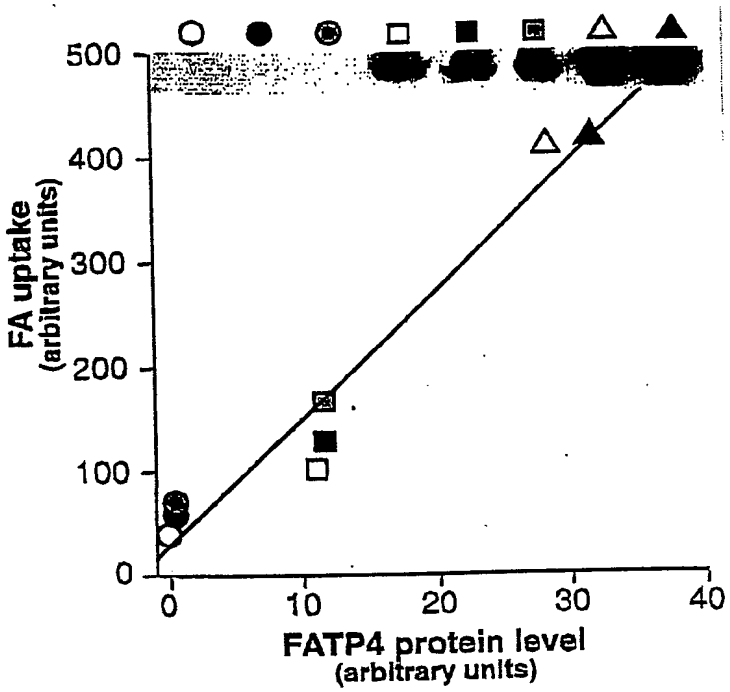
500
400
300
200
100
0
FA uptake
(arbitrary units)
0
10
20
30
40
FATP4 protein level
(arbitrary units)

Figure 95

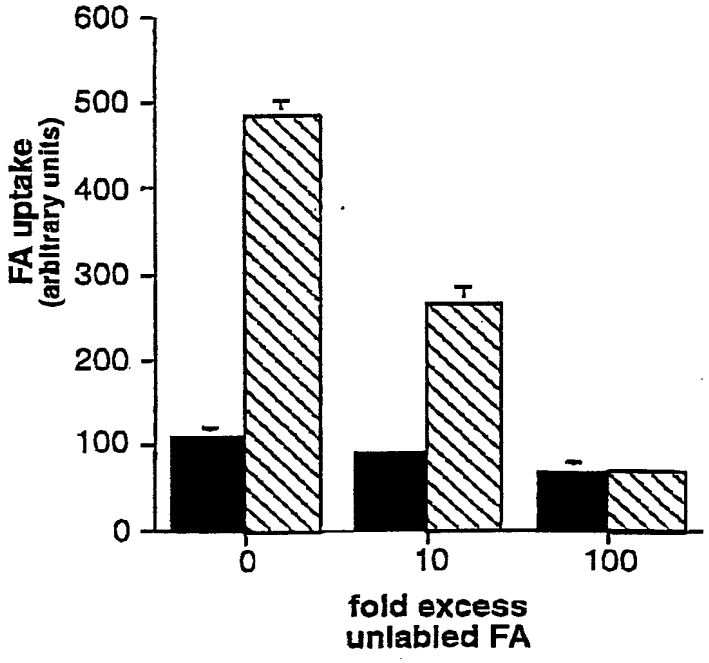
600
500
400
300
200
100
0
FA uptake
(arbitrary units)
0
10
100
fold excess
unlabled FA

Figure 96

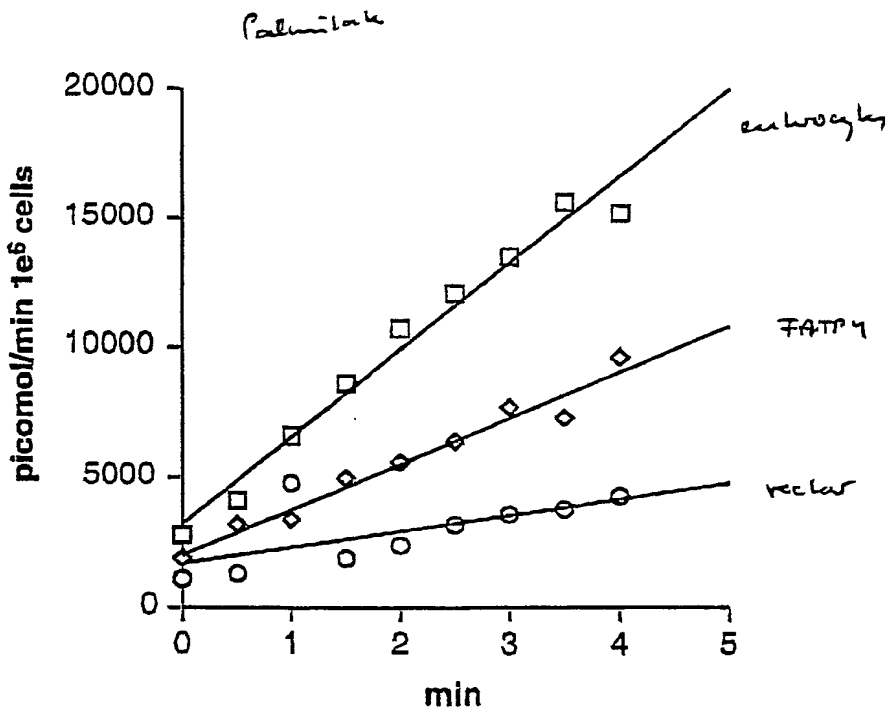
Palmitate
20000
15000
10000
5000
0
picomol/min 1e6 cells
0
1
2
3
4
5
min
FATP4

Figure 97

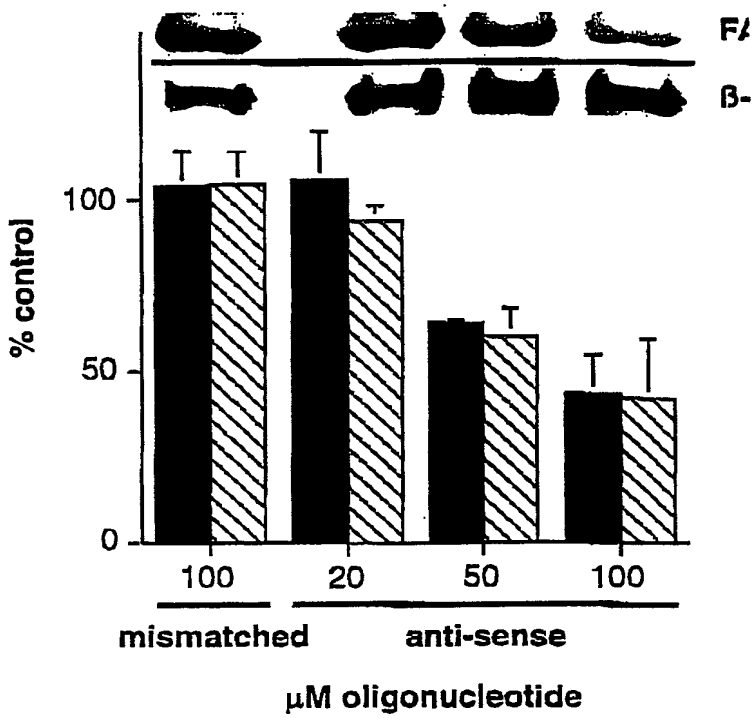
F/
ß-
100
50
0
% control
100
20
50
100
mismatched
anti-sense
µM oligonucleotide

Figure 98

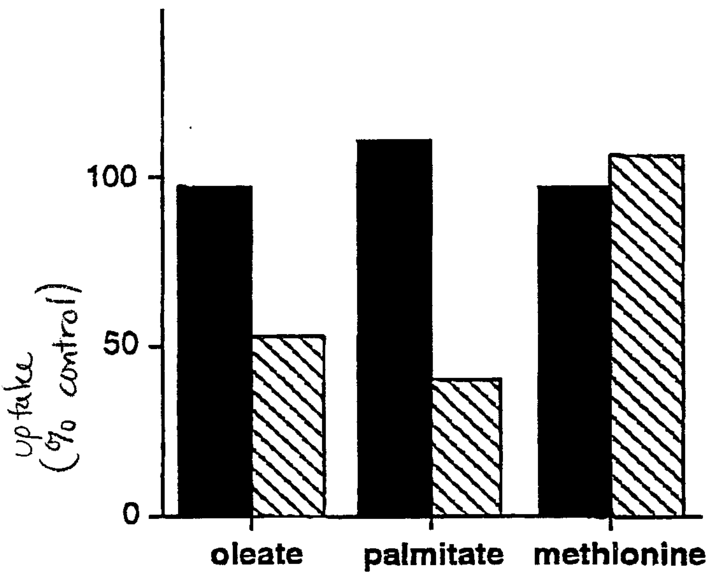

Figure 99